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# **WATER SUPPLY OUTLOOK FOR MONTANA**

U.S. DEPT. OF AGRICULTURE

OCT 23 '75

PROCUREMENT SECTION  
CURRENT SERIAL RECORDS



**U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE**

Collaborating with

**MONTANA AGRICULTURAL EXPERIMENT STATION**

**SNOW PILLOW RECORDS  
1975 WATER YEAR**

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

*Cover Photo: Cabins near Sacajawea Snow Course  
in Bridger Mountains, Montana.*

SFS PHOTO 11-P480-15

## PUBLISHED BY SOIL CONSERVATION SERVICE

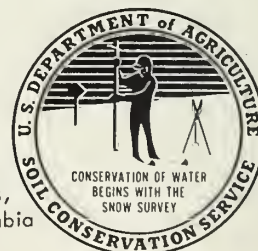
The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 111, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montano	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Woshington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

## PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for Colifornia by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



# ***WATER SUPPLY OUTLOOK FOR MONTANA***

and  
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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## CONTENTS

	Page
MONTANA FALL SUMMARY . . . . .	1-2
SOIL MOISTURE . . . . .	3-6
MAP, 1975 APRIL THROUGH SEPTEMBER STREAMFLOW . . . . .	7
1975 SNOW COVER COMPARISONS . . . . .	8
RESERVOIR STORAGE . . . . .	9
SNOW PILLOW DATA	
Columbia Drainage	
Kootenai River	
Banfield Mountain . . . . .	10
Garver Creek . . . . .	11
Hawkins Lake . . . . .	12
Poorman Creek . . . . .	13
Flathead River	
Flattop Mountain . . . . .	14
Meadow Creek . . . . .	15
Noisy Basin . . . . .	16
Clark Fork River	
Black Pine . . . . .	17
Combination . . . . .	18
Hoodoo Basin . . . . .	19
Lubrecht Flume . . . . .	20
North Fork Elk Creek . . . . .	21
Peterson Meadows . . . . .	22
Bitterroot River	
Saddle Mountain . . . . .	23
Twelvemile Creek . . . . .	24
Twin Lakes . . . . .	25
Missouri Drainage	
Jefferson River	
Rocker Peak . . . . .	26
Madison River	
Black Bear . . . . .	27
Madison Plateau . . . . .	28
Tepee Creek . . . . .	29
West Yellowstone . . . . .	30
Whiskey Creek . . . . .	31
Gallatin River	
Bridger Bowl . . . . .	32
Carrot Basin . . . . .	33
Lick Creek . . . . .	34
Maynard Creek . . . . .	35
Shower Falls . . . . .	36
Taylor Peaks . . . . .	37
Missouri Main Stem	
Deadman Creek . . . . .	38
Frohner Meadows . . . . .	39
Milk River	
Rocky Boy . . . . .	40
Sun-Teton-Marias	
Mount Lockhart . . . . .	41
Waldron . . . . .	42





CONTENTS (Continued)

	Page
Judith River	
Spur Park . . . . .	43
Upper Yellowstone River	
Cole Creek . . . . .	44
Fisher Creek . . . . .	45
Northeast Entrance . . . . .	46
White Mill . . . . .	47
MAP, SNOW COURSES AND RELATED DATA MEASURING SITES	
COOPERATORS . . . . .	Inside Back Cover



MONTANA FALL SUMMARY  
October 1, 1975

\* \* \* \* \*  
\*  
\* A cool spring delayed snowmelt runoff \*  
\* three to four weeks later than normal. \*  
\* In late June, peak snowmelt added to \*  
\* heavy rains to produce large flows in \*  
\* many Missouri River tributaries and \*  
\* some of the Columbia River drainages \*  
\* near the Continental Divide. Extensive \*  
\* flooding occurred in the Sun, Teton, \*  
\* Musselshell, Middle Fork Flathead, \*  
\* and Blackfoot River drainages. \*  
\* \* \* \* \*  
\* \* \* \* \*

COLUMBIA RIVER DRAINAGE

Snowfall started on drier than usual soils and the accumulation of snowpack was below average in early winter. Storm intensity increased and melt was minimal until early May even at lower elevations. The combination of cool temperatures and snowfall resulted in a very large May 1 snowpack particularly in lower elevations. Cool weather persisted with most major streams not reaching their snowmelt peak until after mid-June. Heavy precipitation originating from a major storm system on the east side of the Continental Divide combining with peak snowmelt produced large peak flows primarily in the Middle Fork Flathead River and Upper Blackfoot.

August was generally a wet month and helped maintain good soil moisture. Precipitation since has been light and surface soils are generally showing some dryness.



The need for stored water was less than normal and most irrigation reservoirs have above average storage to be carried over to next year.

#### MISSOURI RIVER DRAINAGE

Early season snowfall was generally below average except for a few small areas with higher than usual snowpack. Soils were generally drier than normal prior to snowfall. Snowfall increased and by April 1, most drainages had snowpack near or above average. A cool, late spring prevented melt even at lower elevations and by May 1, the snowpack was near record proportions at some low elevation snow courses. Snowmelt was three to four weeks later than usual and coincided with heavy precipitation over most of the Missouri River drainage except for the Southwest portion. This resulted in considerable damage to property, agricultural lands, and irrigation diversion structures.

Irrigation reservoir storage is above average reflecting the abundant water supply and reduced demands from stored water.

#### YELLOWSTONE RIVER DRAINAGE

Snowpack began on drier than normal soils in most areas. The snow accumulation remained below average early in the season and then increased to near average by March 1. Lack of melt, additional snowfall and cool, wet spring resulted in an above average snowpack by May 1. Snow persisted in the high elevations with little melt until June. Peak snowmelt was three to four weeks later than normal. Some tributaries experienced damaging flows as result of heavy rainfall during major snowmelt period.



## SOIL MOISTURE

JULY 1, 1975

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †

COLUMBIA RIVER BASINKootenai

Baree Trail	3800	48	7.5	6/28	6.6	5.0	5.3
Murphy Lake R.S.	3000	48	22.6	7/01	19.1	19.4	20.0
Raven	3050	48	23.0	6/28	14.5	14.0	17.6

Flathead

Desert Mountain	5600	54	8.4	7/01	8.4	8.2	8.5
Marias Pass	5250	54	6.5	-	-	-	-

Clark Fork

Black Pine	7100	48	10.0	7/01	8.8	8.9	8.9
Lubrecht Forest	4100	48	26.8	-	-	-	-
Seeley Lake R.S.	4030	48	11.9	-	-	-	-
Skalkaho Summit	7260	48	10.8	7/01	9.7	10.0	10.1

Bitterroot

Gibbons Pass	7100	48	7.1	7/01	7.0	5.8	6.4
Lolo Pass	5250	48	10.6	6/30	9.8	10.0	9.5

MISSOURI RIVER BASINBeaverhead

Lakeview	6700	48	15.3	6/30	14.8	9.1	13.6
----------	------	----	------	------	------	-----	------

Madison

West Yellowstone	6700	48	6.5	7/02	2.9	2.6	2.9
------------------	------	----	-----	------	-----	-----	-----

Gallatin

Bridger Bowl	7250	48	17.0	6/30	14.1	15.0	16.0
College Site No. 2	4856	54	17.7	6/27	13.9	11.1	13.2
Lick Creek	6860	48	18.8	6/30	14.6	16.2	17.6
Twenty-One Mile	7150	48	10.0	7/02	9.2	8.3	8.7

Missouri Main Stem

Kings Hill	7420	48	11.8	6/30	11.2	11.6	10.7
Stemple Pass	6350	48	5.9	6/30	5.2	4.3	5.0

Milk

Beaver Creek	3950	48	20.9	6/26	17.5	11.8	12.0
Rocky Boy	4700	36	10.1	6/26	9.7	8.8	8.9

Yellowstone

Battle Ridge	6020	48	17.6	6/30	15.6	12.1	14.7
Northeast Entrance	7350	48	9.4	6/27	9.5	7.1	8.8
PMC Dryland	3700	48	20.7	6/30	8.2	7.3	-





## SOIL MOISTURE

AUGUST 1, 1975

DRAINAGE BASIN and or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †

COLUMBIA RIVER BASIN

<u>Kootenai</u>								
Baree Trail	3800	48	7.5	7/31	3.4	2.7	3.6	
Murphy Lake R.S.	3000	48	22.6	8/01	19.4	18.9	18.9	
Raven	3050	48	23.0	7/31	13.8	13.5	16.1	
<u>Flathead</u>								
Desert Mountain	5600	54	8.4	7/28	6.0	6.4	6.4	
Marias Pass	5250	54	6.5	7/27	4.6	4.0	4.1	
<u>Clark Fork</u>								
Black Pine	7100	48	10.0	7/31	9.1	8.1	8.5	
Lubrecht Forest	4100	48	26.8	-	-	-	-	
Seeley Lake R.S.	4030	48	11.9	8/04	8.9	6.6	6.8	
Skalkaho Summit	7260	48	10.8	7/31	10.5	10.4	10.4	
<u>Bitterroot</u>								
Gibbons Pass	7100	48	7.1	8/04	6.2	3.8	4.8	
Lolo Pass	5250	48	10.6	7/30	7.3	6.2	5.8	

MISSOURI RIVER BASIN

<u>Beaverhead</u>								
Lakeview	6700	48	15.3	7/31	16.8	14.5	10.3	
<u>Madison</u>								
West Yellowstone	6700	48	6.5	7/31	2.6	1.4	2.1	
<u>Gallatin</u>								
Bridger Bowl	7250	48	17.0	7/29	14.9	14.9	15.5	
College Site No. 2	4856	54	17.7	8/01	11.4	8.4	10.1	
Lick Creek	6860	48	18.8	7/29	15.0	13.3	14.8	
Twenty-One Mile	7150	48	10.0	7/31	7.1	4.4	5.6	
<u>Missouri Main Stem</u>								
Kings Hill	7420	48	11.8	8/01	9.7	9.2	9.2	
Stemple Pass	6350	48	5.9	8/04	4.8	3.5	4.0	
<u>Milk</u>								
Beaver Creek	3950	48	20.9	7/30	8.8	7.6	8.2	
Rocky Boy	4700	36	10.1	7/30	7.5	6.8	7.4	
<u>Yellowstone</u>								
Battle Ridge	6020	48	17.6	7/29	11.2	10.6	11.0	
Northeast Entrance	7350	48	9.4	-	-	-	-	
PMC Dryland	3700	48	20.7	7/29	5.8	4.9	-	



## SOIL MOISTURE

SEPTEMBER 1, 1975

DRAINAGE BASIN and or STATION		Profile (Inches)			Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity			This Year	Last Year	Average †

COLUMBIA RIVER BASINKootenai

Baree Trail	3800	48	7.5	9/03	4.8	2.4	4.0
Murphy Lake R.S.	3000	48	22.6	9/02	19.9	18.7	18.8
Raven	3050	48	23.0	9/03	13.6	13.5	15.3

Flathead

Desert Mountain	5600	54	8.4	9/02	8.3	4.9	5.2
Marias Pass	5250	54	6.5	-	-	-	-

Clark Fork

Black Pine	7100	48	10.0	8/28	8.9	8.3	8.0
Lubrecht Forest	4100	48	26.8	-	-	-	-
Seeley Lake R.S.	4030	48	11.9	9/04	10.1	4.2	4.1
Skalkaho Summit	7260	48	10.8	8/28	10.6	10.3	9.8

Bitterroot

Gibbons Pass	7100	48	7.1	9/02	6.3	4.3	3.8
Lolo Pass	5250	48	10.6	8/29	7.8	4.4	4.1

MISSOURI RIVER BASINBeaverhead

Lakeview	6700	48	15.3	8/31	15.9	8.7	8.8
----------	------	----	------	------	------	-----	-----

Madison

West Yellowstone	6700	48	6.5	8/31	1.7	1.5	1.8
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Gallatin

Bridger Bowl	7250	48	17.0	9/02	14.9	15.0	15.9
College Site No. 2	4856	54	17.7	8/29	8.3	17.1	9.7
Lick Creek	6860	48	18.8	9/03	12.7	12.2	14.8
Twenty-One Mile	7150	48	10.0	8/30	5.6	2.8	3.9

Missouri Main Stem

Kings Hill	7420	48	11.8	8/29	9.7	9.4	7.8
Stemple Pass	6350	48	5.9	9/30	4.8	3.8	3.8

Milk

Beaver Creek	3950	48	20.9	8/28	9.1	11.1	7.4
Rocky Boy	4700	36	10.1	8/28	9.6	9.5	6.9

Yellowstone

Battle Ridge	6020	48	17.6	9/02	10.9	8.9	9.2
Northeast Entrance	7350	48	9.4	-	-	-	-
PMC Dryland	3700	48	20.7	9/01	4.8	5.3	5.5



## SOIL MOISTURE

OCTOBER 1, 1975

DRAINAGE BASIN and or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †

COLUMBIA RIVER BASINKootenai

Baree Trail	3800	48	7.5	10/03	2.8	2.6	4.7
Murphy Lake R.S.	3000	48	22.6	10/02	19.1	18.6	18.6
Raven	3050	48	23.0	10/02	16.6	13.7	16.4

Flathead

Desert Mountain	5600	54	8.4	10/01	6.2	4.9	5.8
Maria Pass	5250	54	6.5	9/23	4.7	3.2	3.9

Clark Fork

Black Pine	7100	48	10.0	10/01	8.2	7.8	8.0
Lubrecht Forest	4100	48	26.8	10/02	14.6	13.4	13.4
Seeley Lake R.S.	4030	48	11.9	10/02	8.4	4.0	4.6
Skalkaho Summit	7260	48	10.8	10/01	10.4	9.5	10.2

Bitterroot

Gibbons Pass	7100	48	7.1	9/29	5.5	3.1	4.3
Lolo Pass	5250	48	10.6	9/26	6.4	3.2	4.4

MISSOURI RIVER BASINBeaverhead

Lakeview	6700	48	15.3	10/01	11.7	6.4	8.3
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Madison

West Yellowstone	6700	48	6.5	10/06	1.4	1.3	2.4
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Gallatin

Bridger Bowl	7250	48	17.0	10/01	14.8	15.0	15.6
College Site No. 2	4856	54	17.7	10/03	6.9	12.5	10.0
Lick Creek	6860	48	18.8	9/30	12.1	12.0	15.2
Twenty-One Mile	7150	48	10.0	10/06	3.1	2.2	4.5

Missouri Main Stem

Kings Hill	7420	48	11.8	9/30	9.0	9.2	7.7
Stemple Pass	6350	48	5.9	9/29	4.1	3.2	3.8

Milk

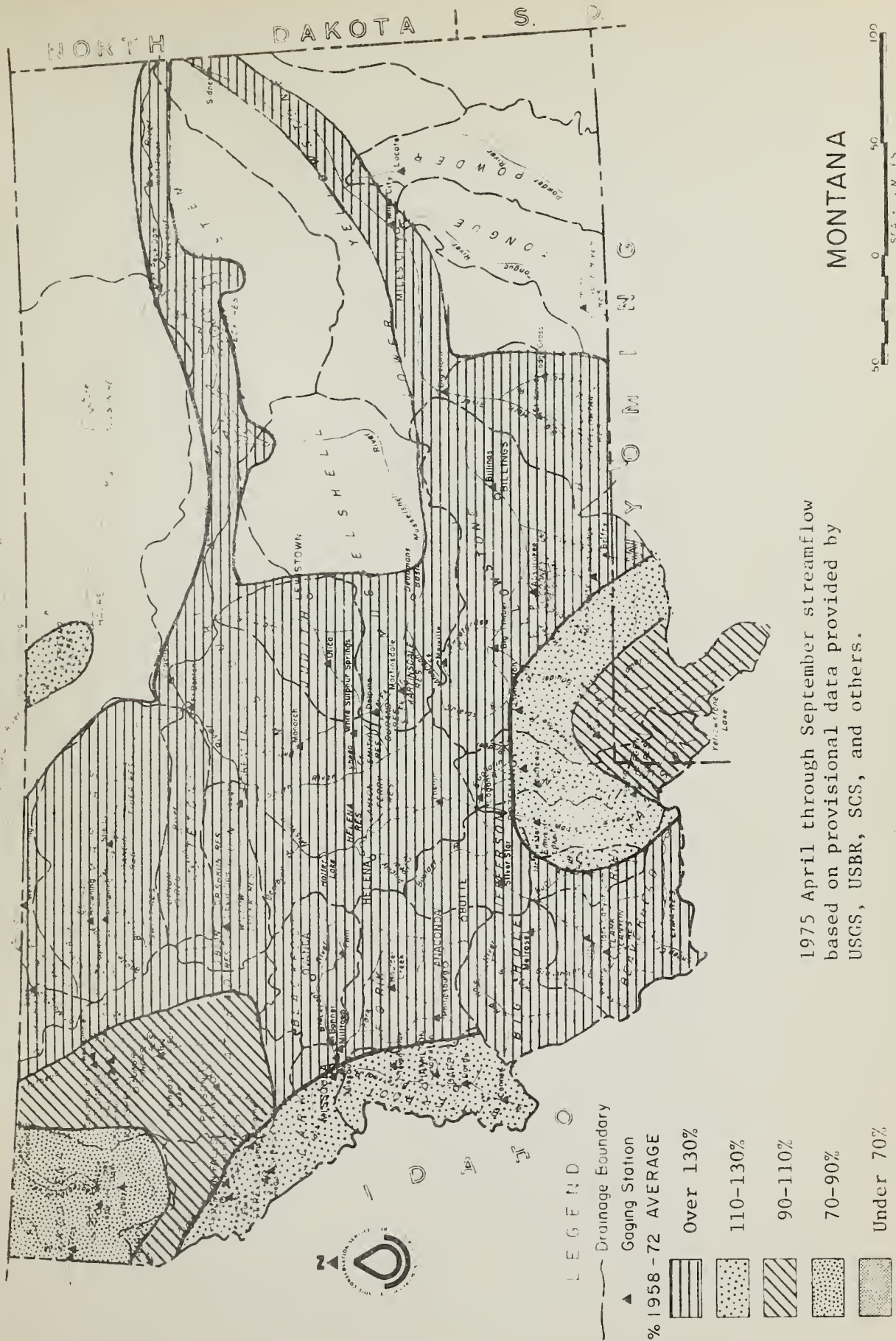
Beaver Creek	3950	48	20.9	9/29	8.5	8.8	7.2
Rocky Boy	4700	36	10.1	9/29	9.2	8.8	7.4

Yellowstone

Battle Ridge	6020	48	17.6	10/01	11.4	7.9	9.9
Northeast Entrance	7350	48	9.4	10/02	4.1	3.6	6.4
PMC Dryland	3700	48	20.7	9/29	4.6	5.3	5.6







1975 April through September streamflow based on provisional data provided by USGS, USBR, SCS, and others.



1975 SNOW COVER COMPARISONS - PERCENT AVERAGE

<u>DRAINAGE</u>	<u>JAN. 1</u>	<u>FEB. 1</u>	<u>MAR. 1</u>	<u>APR. 1</u>	<u>MAY 1</u>
Kootenai	-	91	108	114	121
Flathead	75	86	103	107	116
Upper Clark Fork	76	104	106	112	143
Lower Clark Fork	79	94	108	114	123
Bitterroot	88	108	116	116	133
Jefferson	76	92	107	116	142
Madison	67	79	99	109	135
Gallatin	88	102	101	106	119
Sun-Marias-Teton	69	80	88	95	112
Missouri Main Stem	81	102	101	109	137
Milk	-	84	99	117	155
Yellowstone	72	84	100	106	119
Little Bighorn	-	132	111	120	136



# RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

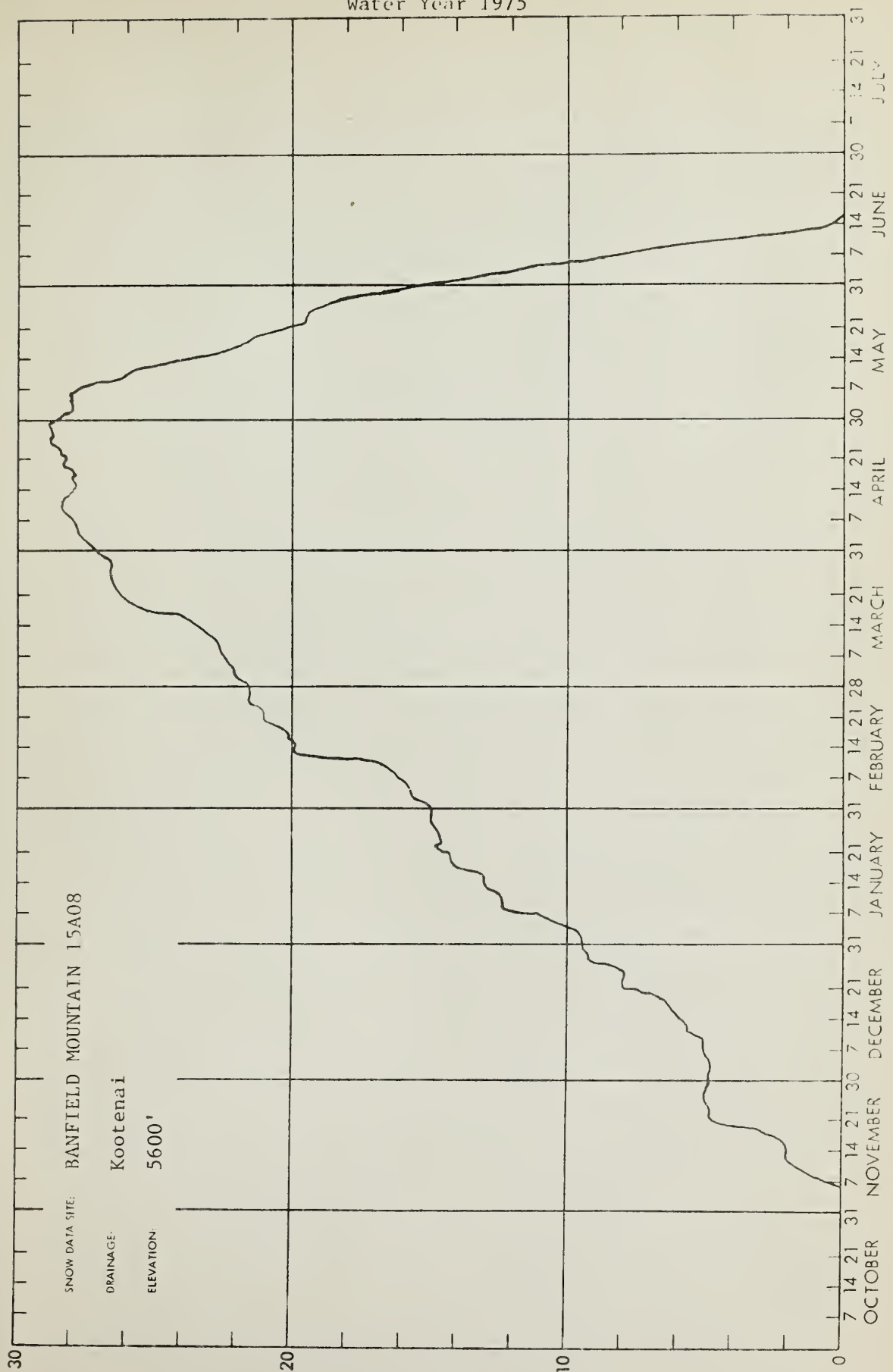
Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average
COLUMBIA RIVER BASIN					
Kootenai	Koocanusa	5,694.0	5,420.0	5,420.0	-
Flathead	Hungry Horse	3,428.0	3,345.0	3,215.0	3,293.0
	Flathead Lake	1,791.0	1,718.0	1,762.0	1,738.0
	Camas (4)	45.2	15.0	16.9	21.4
	Mission Valley (8)	100.3	41.7	29.8	22.7
Clark Fork	Georgetown Lake	31.0	30.9	25.8	28.4
	Lower Willow Creek	4.6	3.2	.3	1.2
	Nevada Creek	12.6		-	4.8
	Noxon Rapids	334.6	328.3	316.5	323.7
Bitterroot	Como	34.9		-	1.7
	Painted Rocks	31.7	29.6	14.3	26.5

## MISSOURI RIVER BASIN

Beaverhead	Clark Canyon	328.9	170.6	62.0	125.6
	Lima	84.0	37.8	28.4	27.1
Ruby	Ruby	38.8		14.8	10.8
Madison	Hebgen Lake	377.5	362.9	341.2	315.9
	Ennis Lake	41.0	37.6	38.2	36.4
Gallatin	Middle Creek	8.0	3.4	4.7	2.9
Missouri	Canyon Ferry	2,043.0	1,908.0	1,667.0	1,742.0
	Hauser & Helena	61.9	59.6	46.1	58.7
	Lake Helena	10.4	9.6	10.2	10.3
	Holter Lake	81.9	80.2	78.9	75.4
	Smith River	10.6		8.6	4.8
	Bair	7.0		5.4	3.0
	Martinsdale	23.1		14.3	7.8
	Deadman's Basin	72.2		37.3	32.5
	Fort Peck Lake	19,140.0	18,220.0	17,160.0	14,550.0
Sun	Gibson	104.8	61.6	45.1	31.0
	Willow Creek	32.2	24.3	24.2	17.7
	Pishkun	32.0	17.2	17.9	16.4
Marias	Lower Two Medicine	11.9	11.7	8.6	3.5
	Four Horns	19.2	13.3	14.1	11.0
	Swift	30.0	21.6	10.6	13.9
	Lake Frances	111.9	95.4	22.3	78.9
	Tiber	1,347.0	616.2	331.7	642.3
Milk	Beaver Creek	3.5	1.5	2.7	-
	Fresno	127.2	123.5	104.6	66.2
	Nelson	66.8	57.2	57.6	43.4
	Lake Sherburne	66.2	50.5	7.9	6.4
Yellowstone	Mystic Lake	21.0	19.6	15.7	20.1
	Tongue River	68.0		30.9	24.1
	Cooney	27.4	8.5	17.0	12.2
Bighorn	Bighorn Lake	1,356.0	1,018.0	1,056.0	977.9



# SNOW PILLOW DATA Water Year 1975

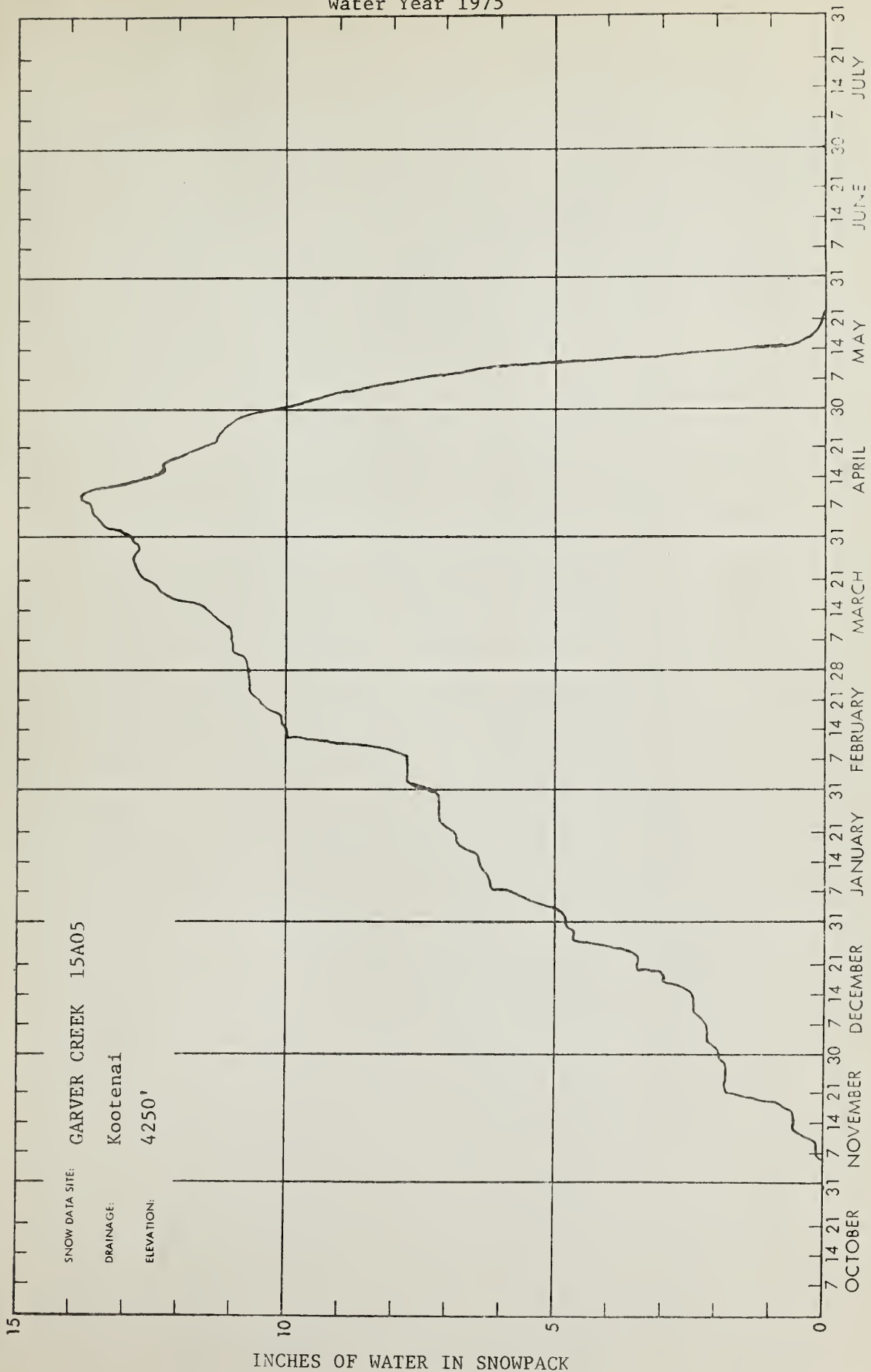


INCHES OF WATER IN SNOWPACK





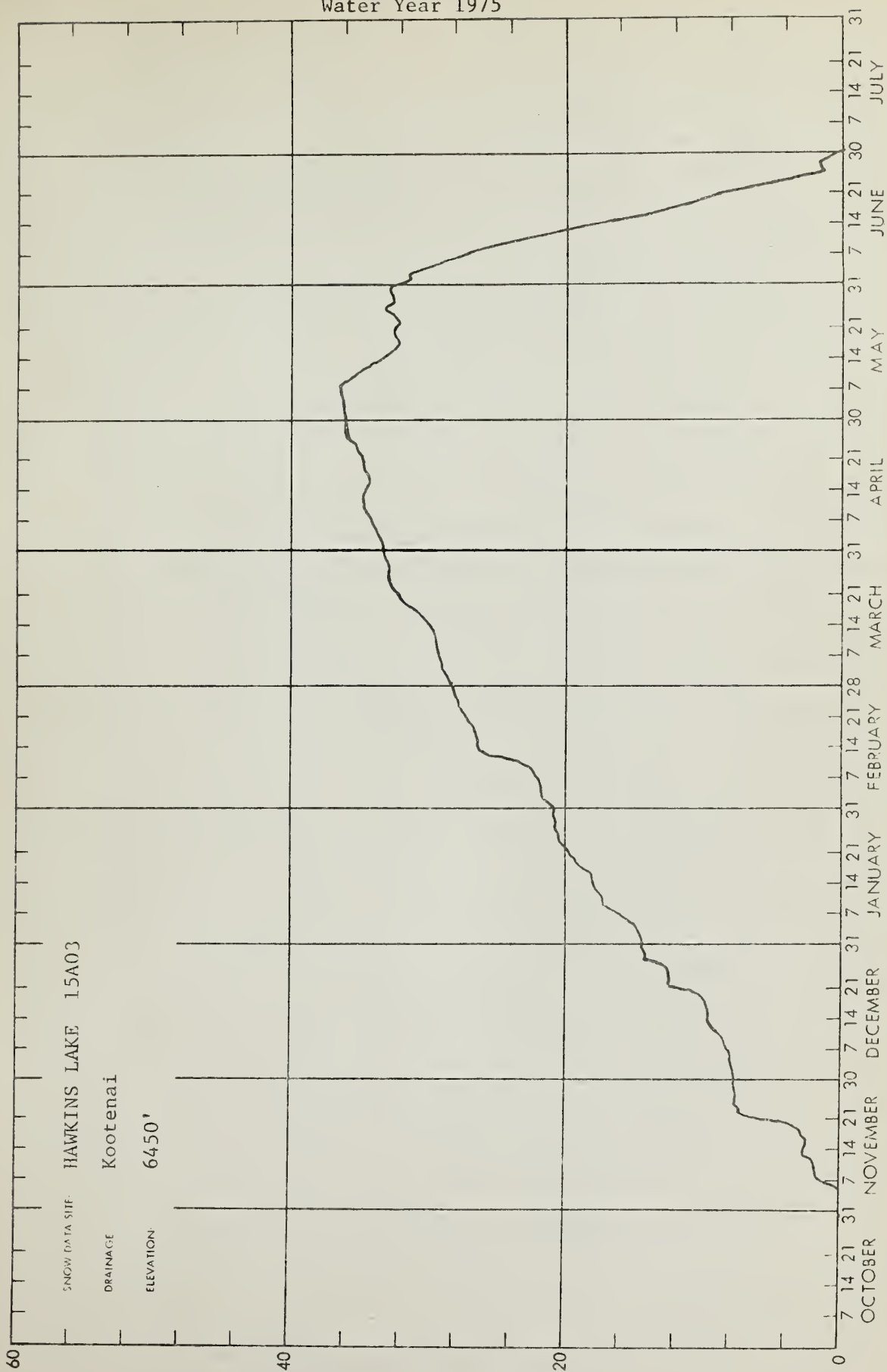
# SNOW PILLOW DATA Water Year 1975



INCHES OF WATER IN SNOWPACK



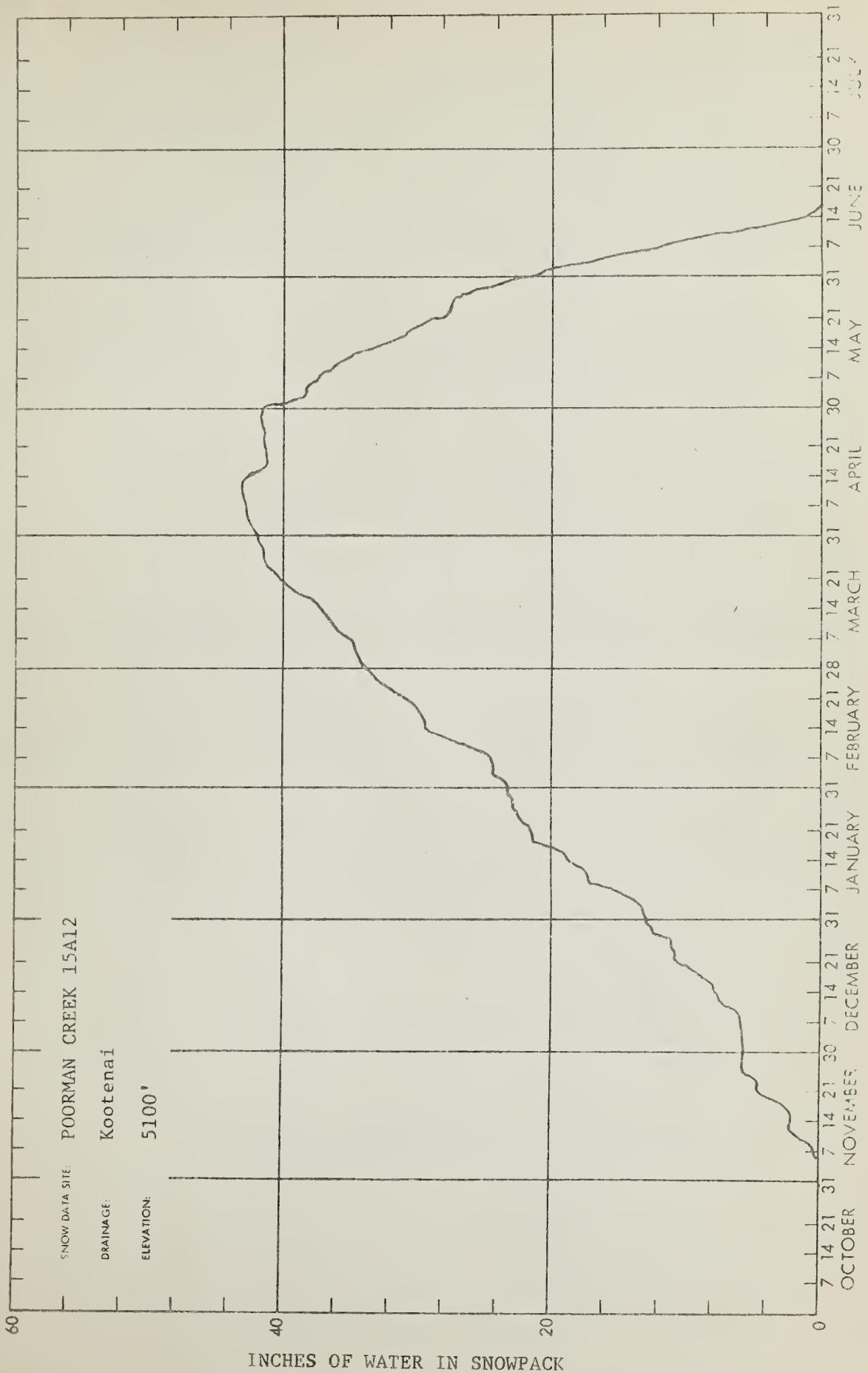
SNOW PILLOW DATA  
Water Year 1975



INCHES OF WATER IN SNOWPACK



SNOW PILLOW DATA  
Water Year 1975

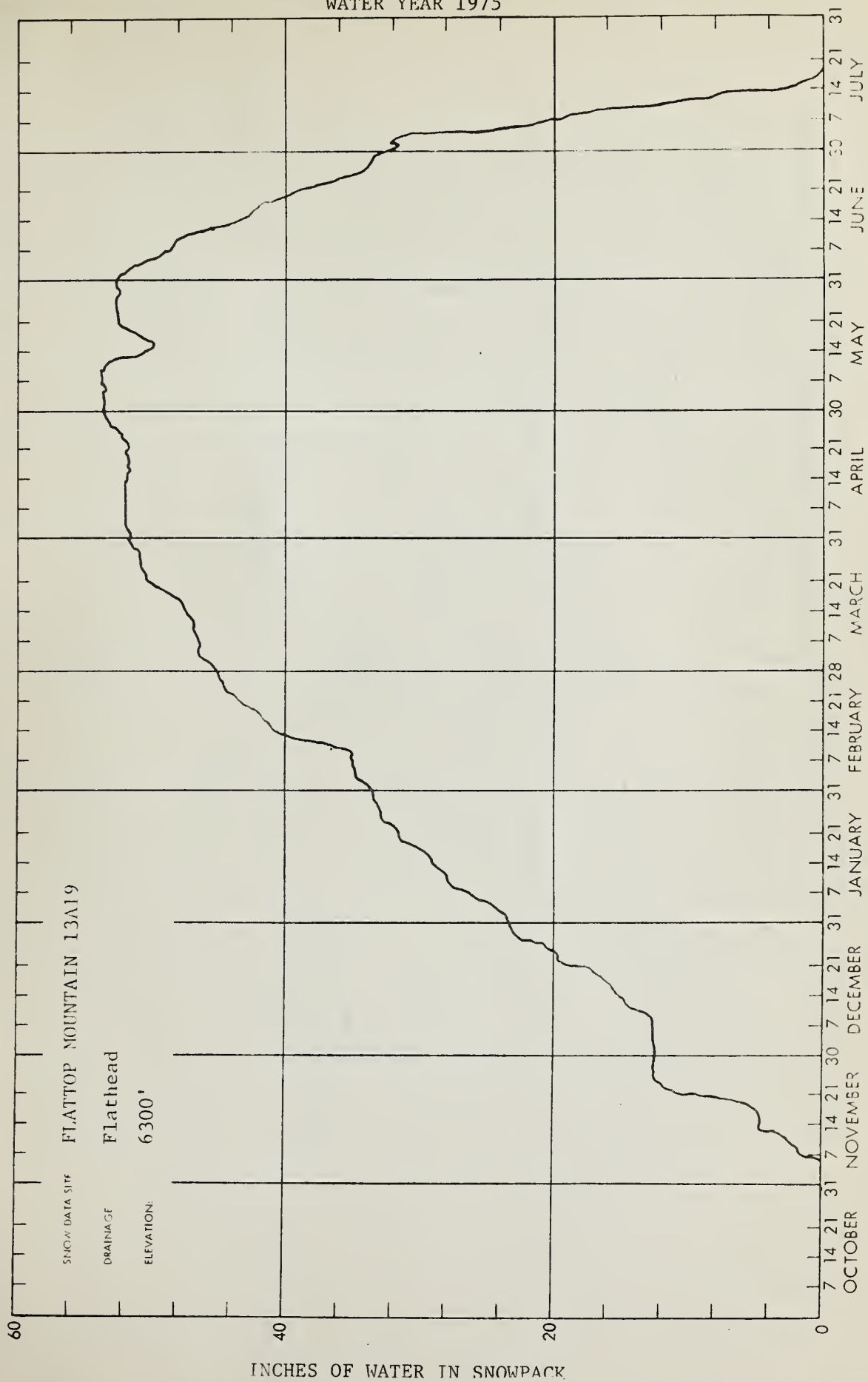






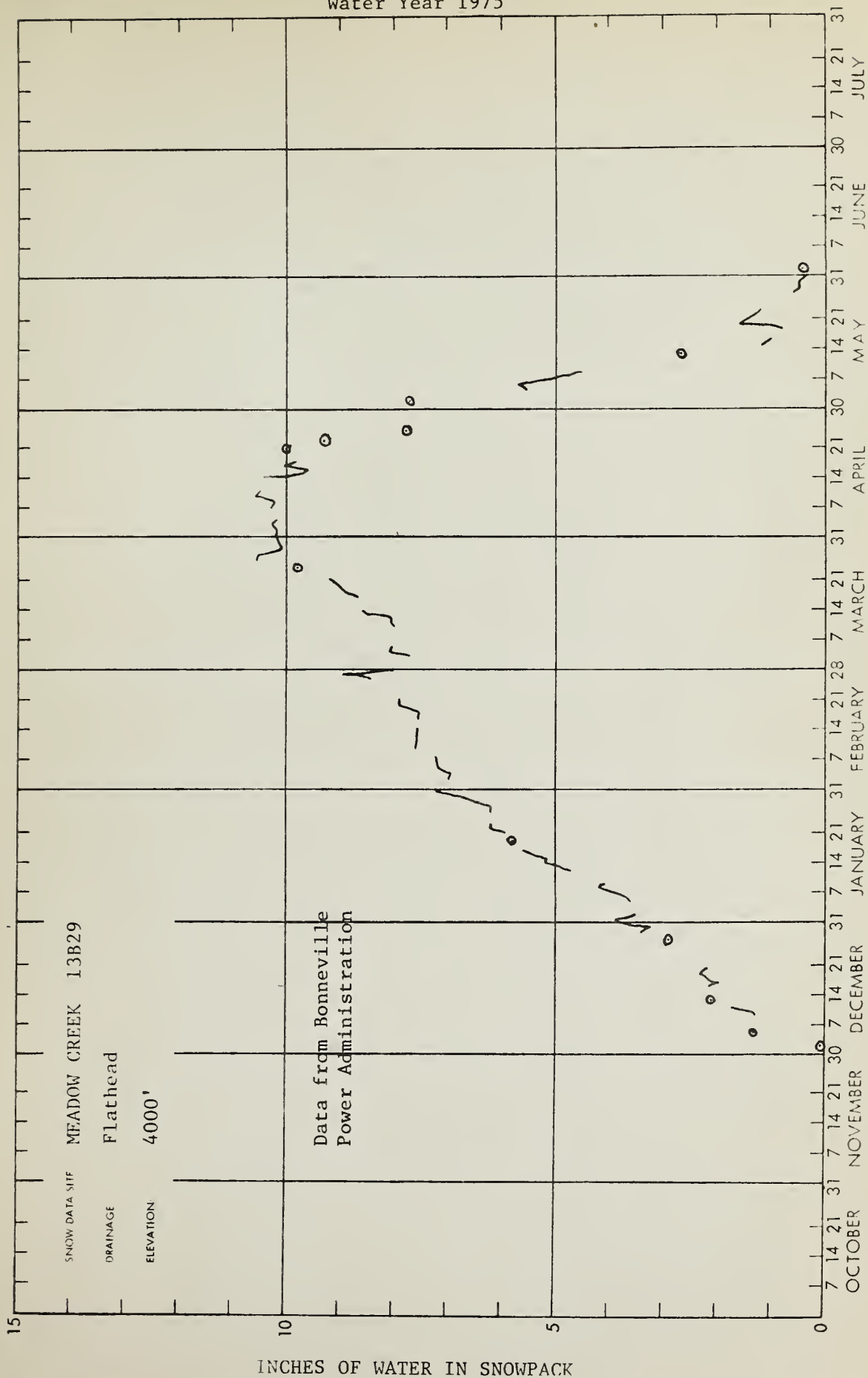
SNOW PILLOW DATA  
WATER YEAR 1975

WSFB-X13C





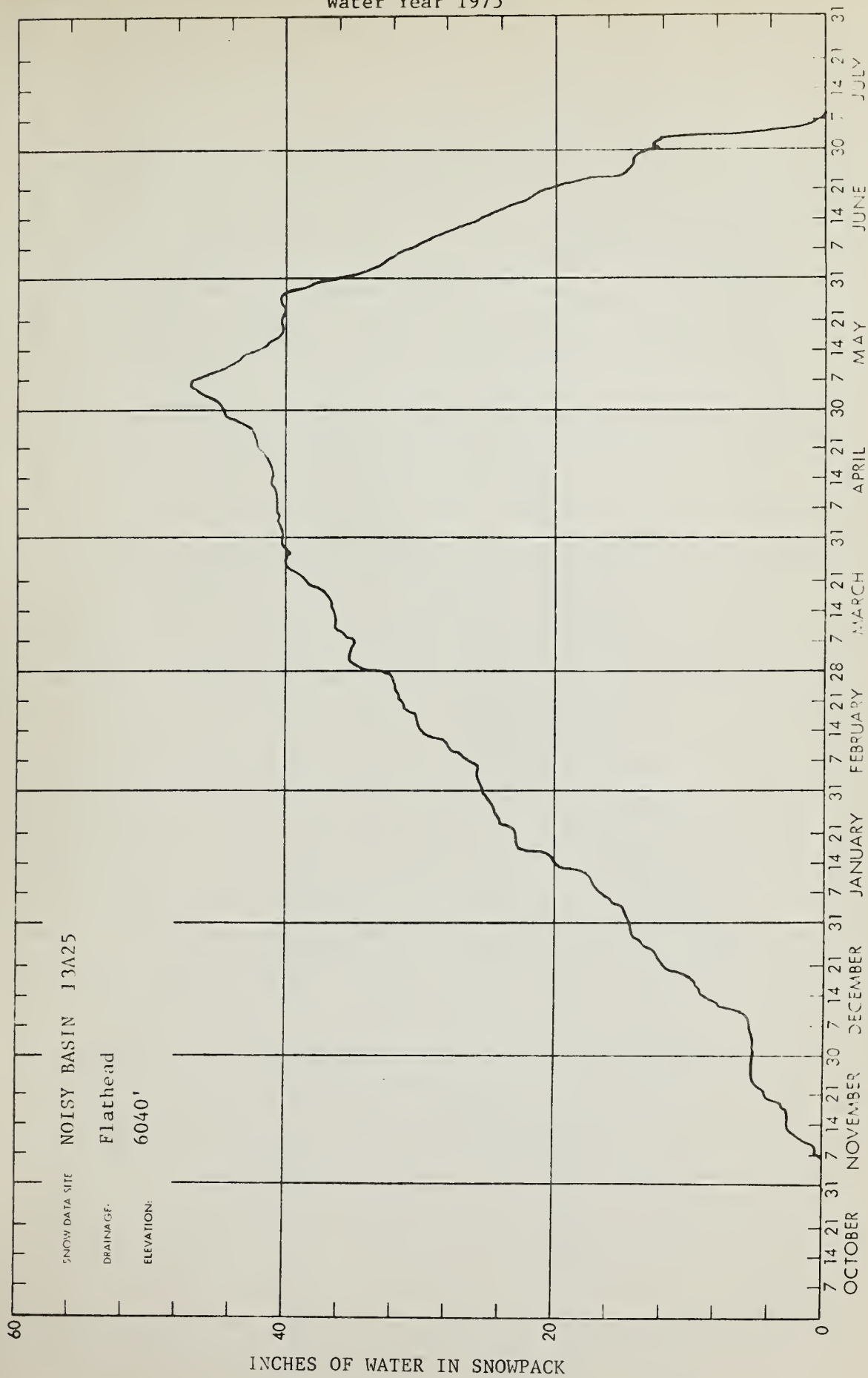
SNOW PILLOW DATA  
Water Year 1975





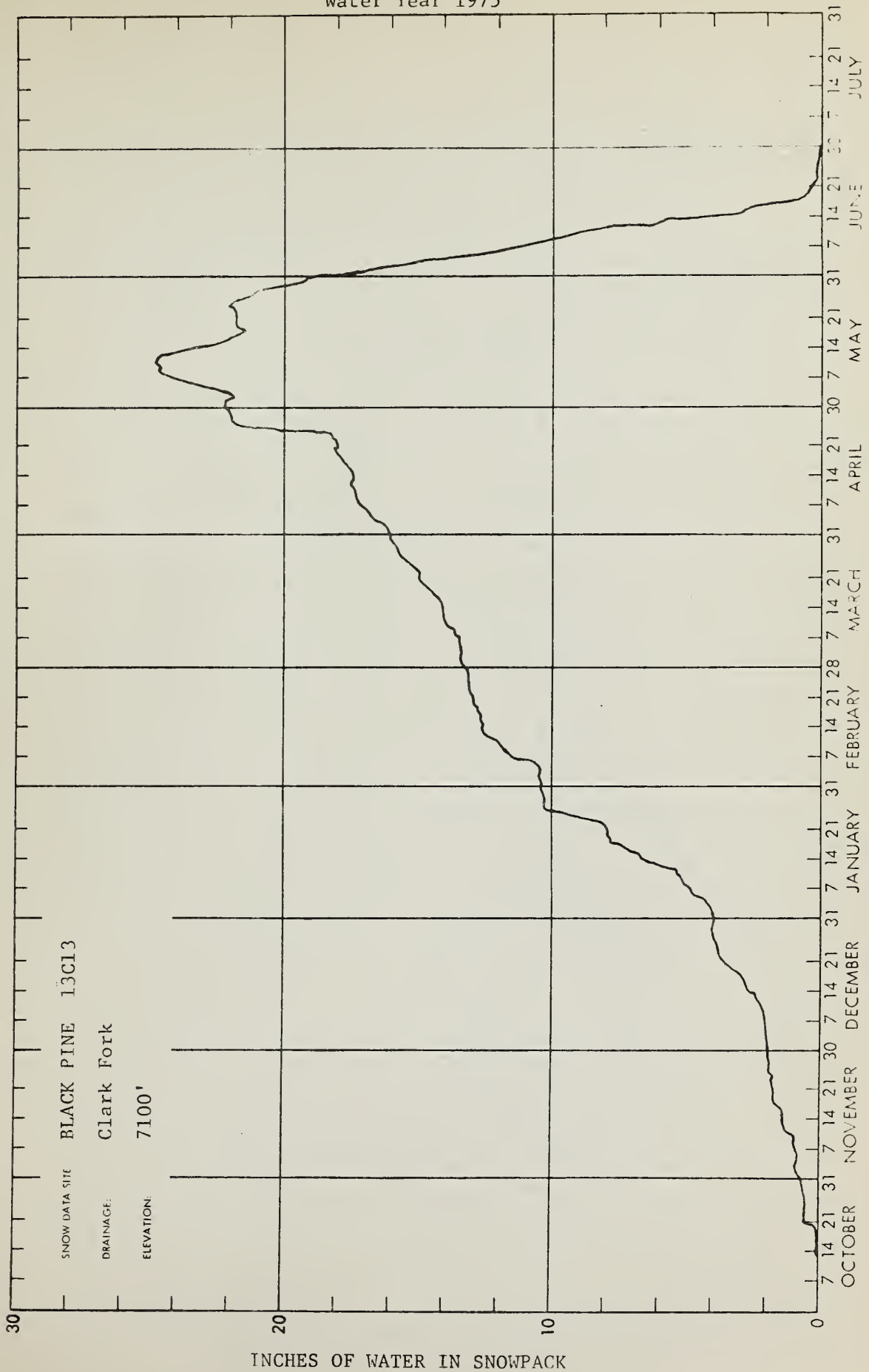
SNOW PILLOW DATA  
Water Year 1975

WSFB-X13C





SNOW PILLOW DATA  
Water Year 1975



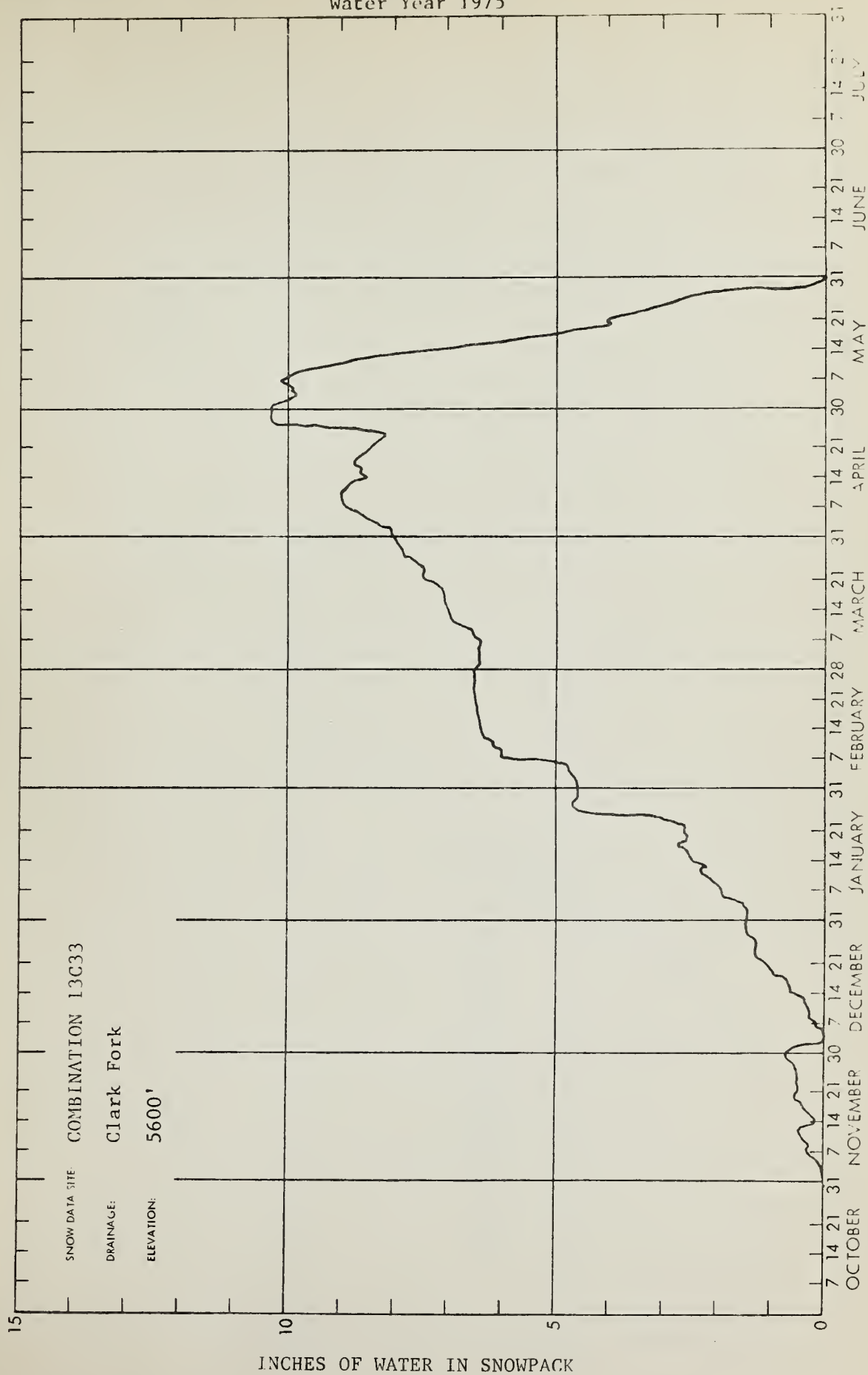
INCHES OF WATER IN SNOWPACK





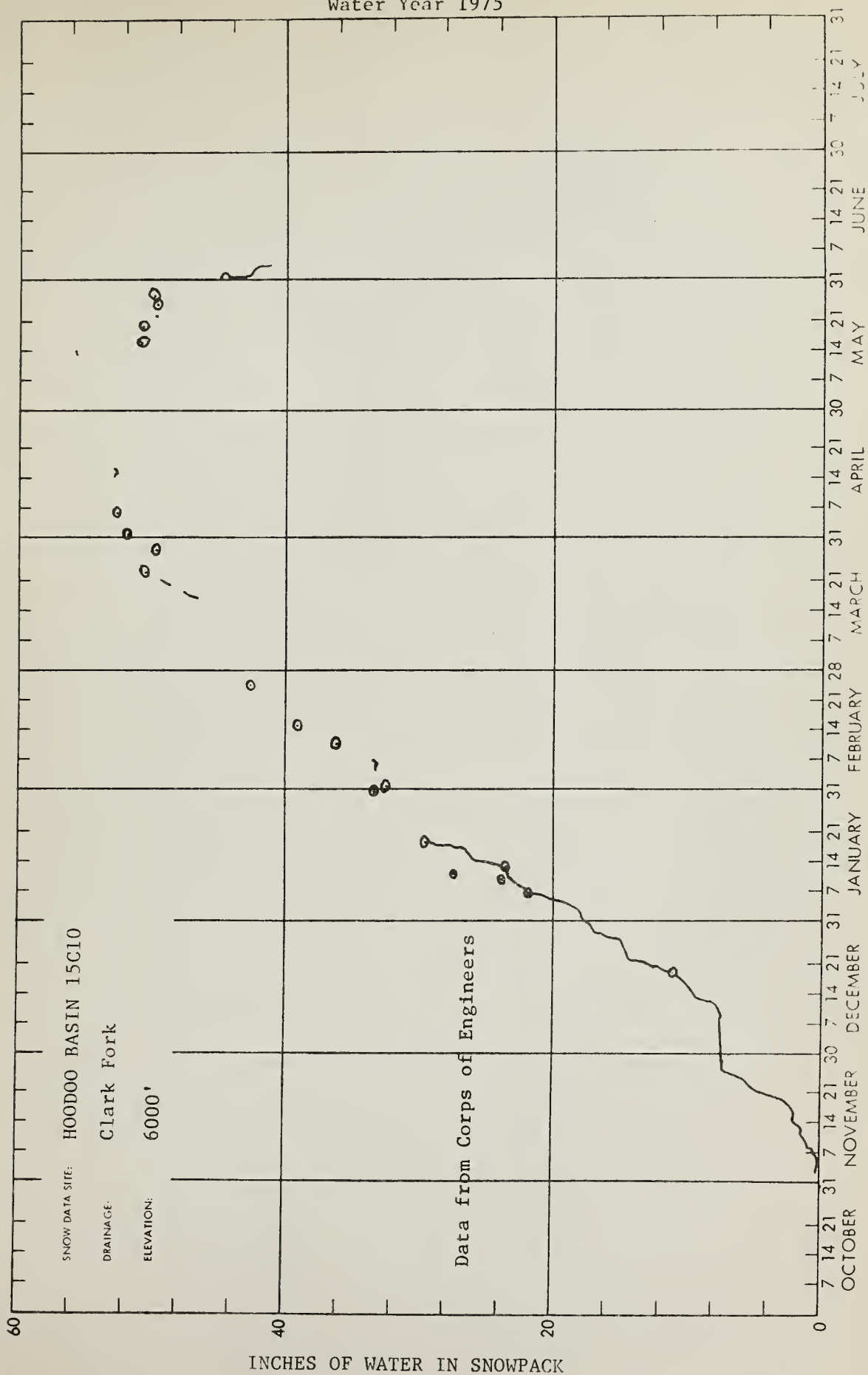
# SNOW PILLOW DATA Water Year 1975

WSFB-X.13A



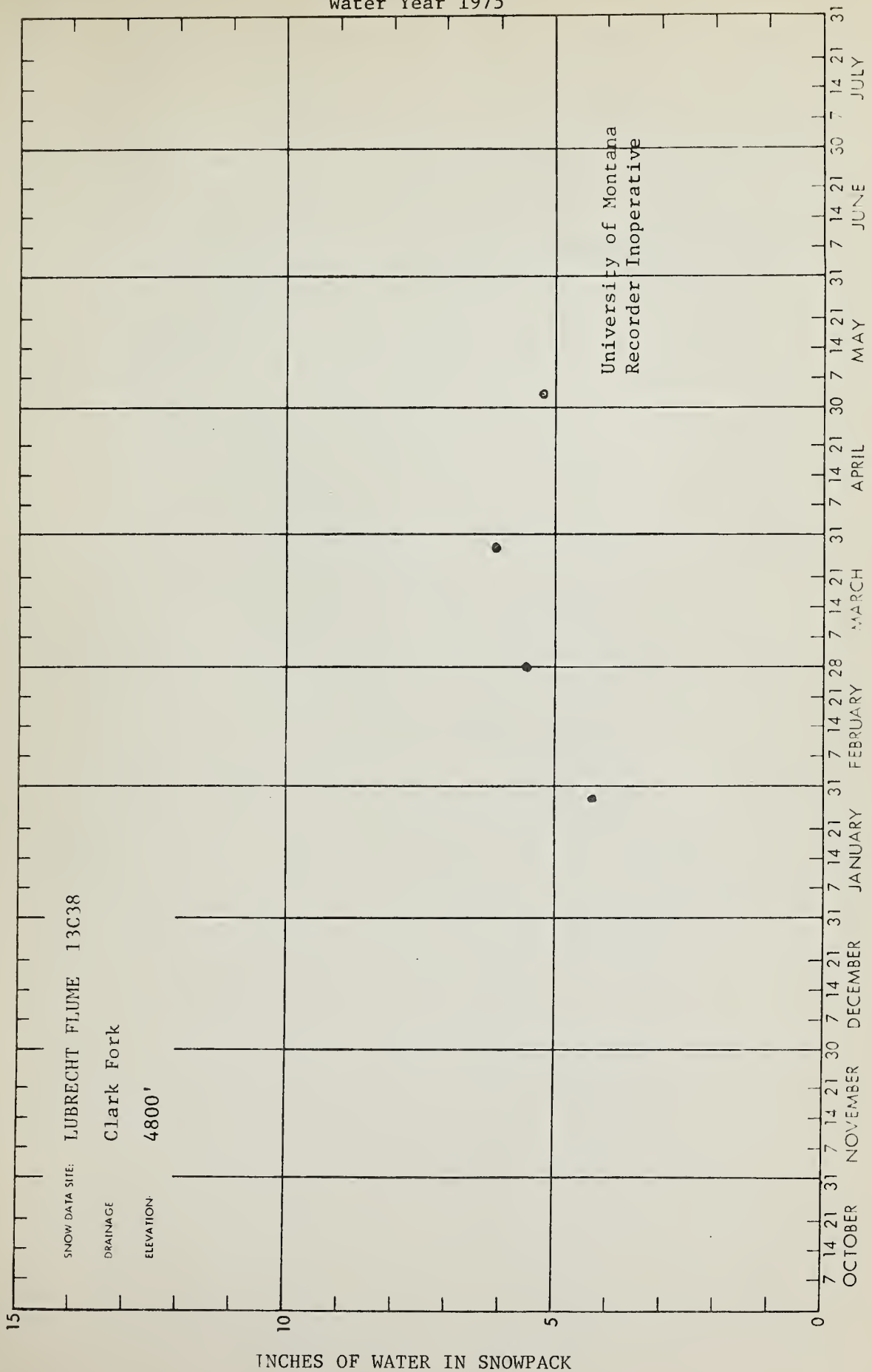


# SNOW PILLOW DATA Water Year 1975





SNOW PILLOW DATA  
Water Year 1975

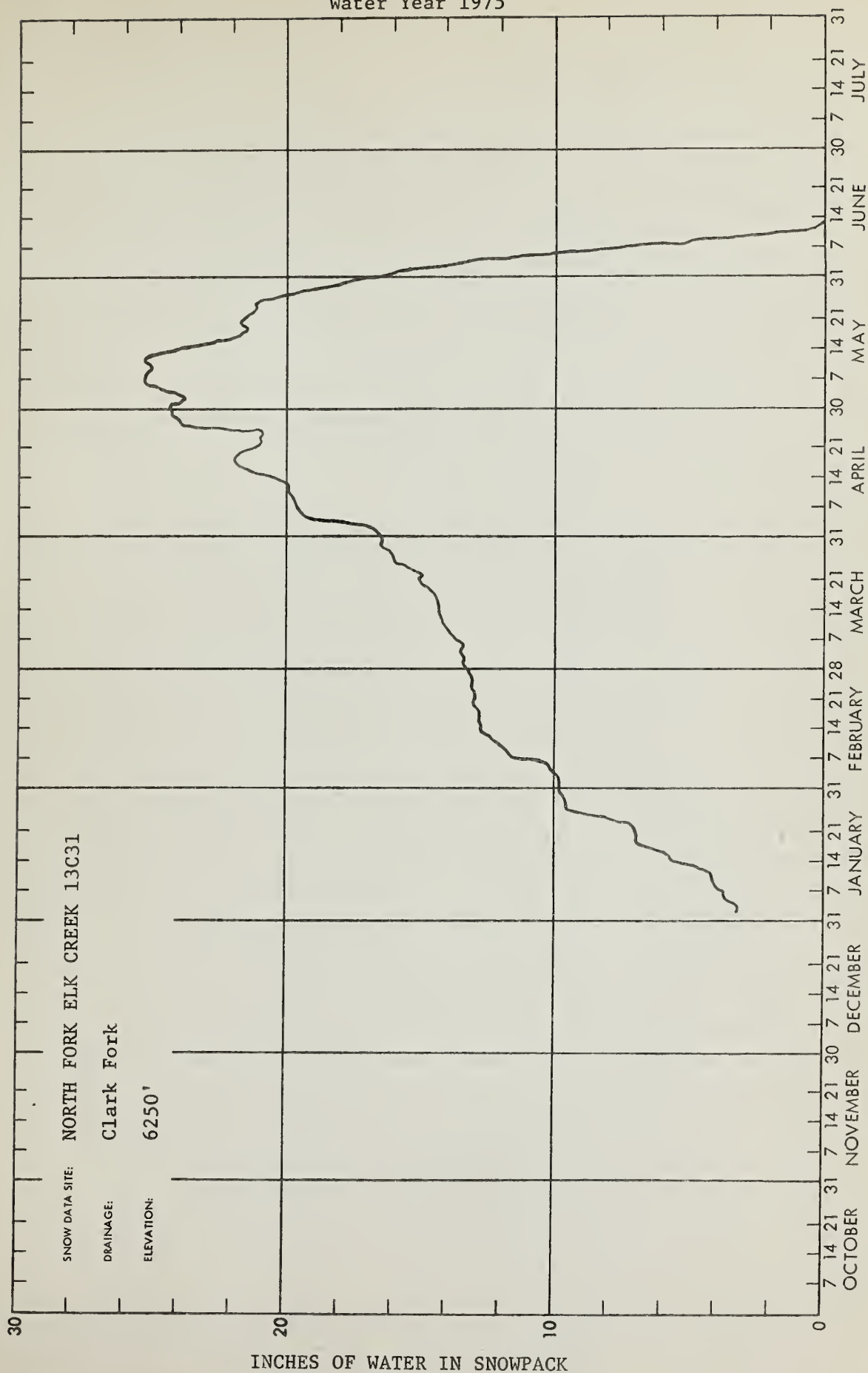


INCHES OF WATER IN SNOWPACK



# SNOW PILLOW DATA Water Year 1975

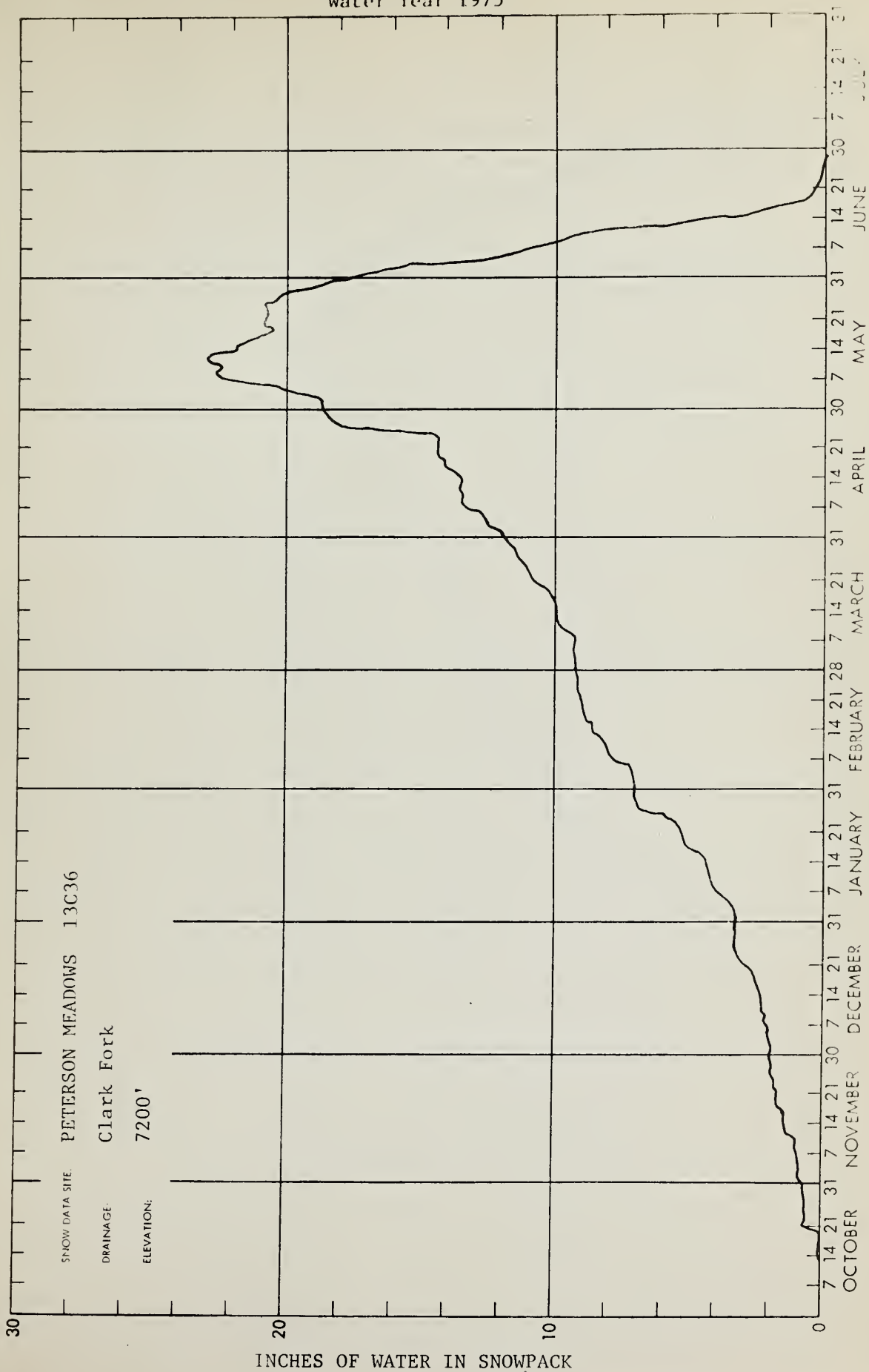
WSFB-X138







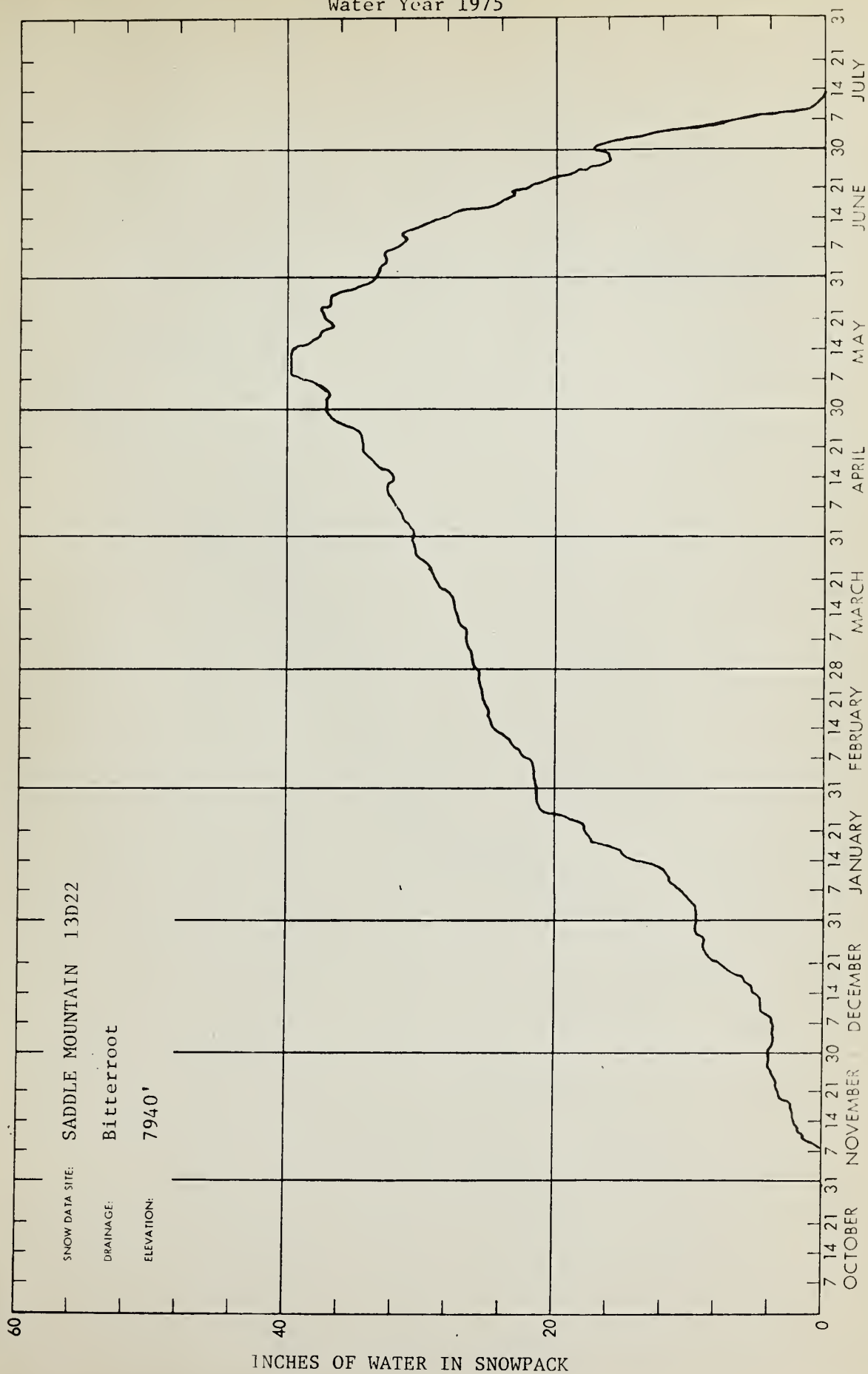
# SNOW PILLOW DATA Water Year 1975





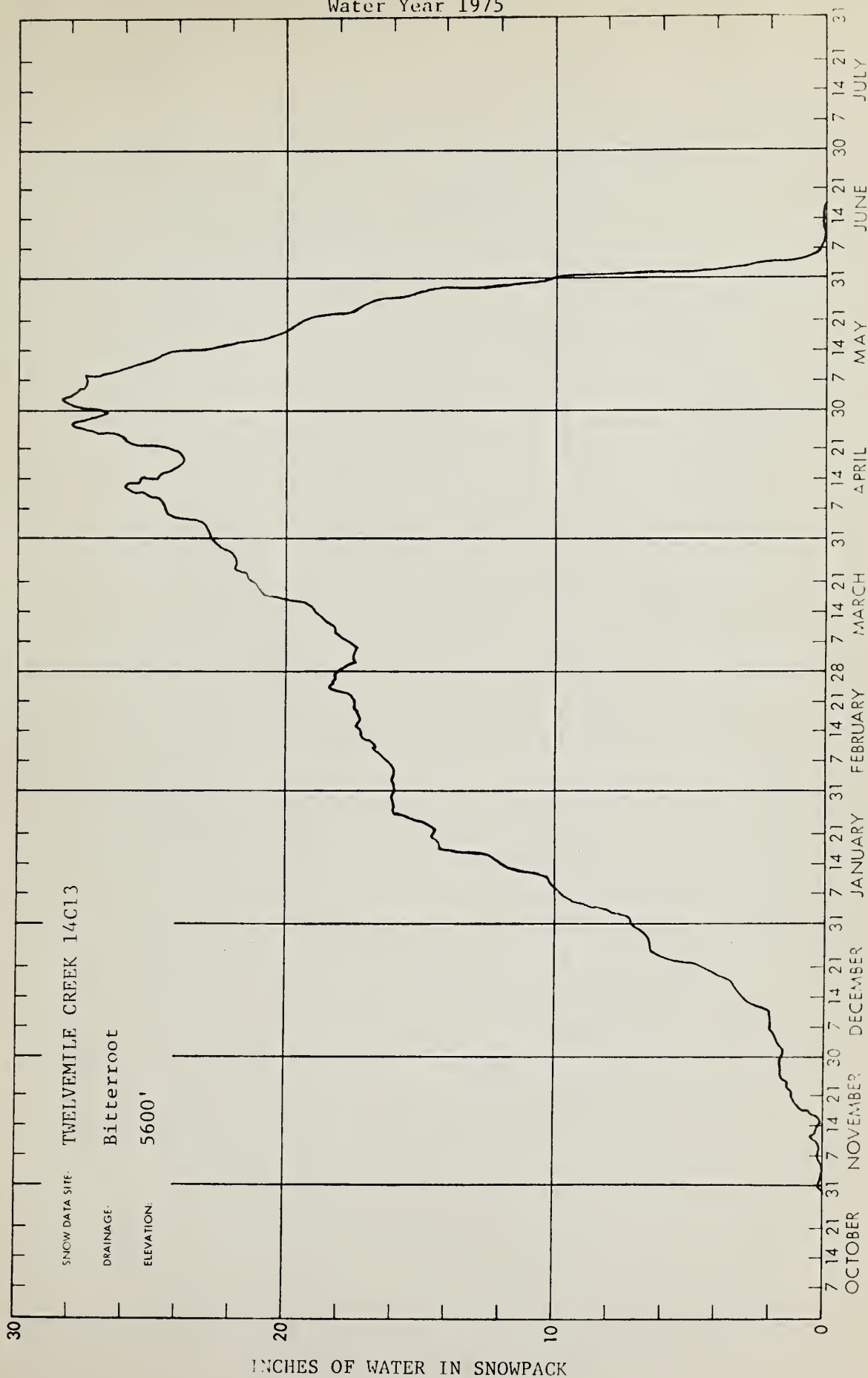
SNOW PILLOW DATA  
Water Year 1975

WSFB-X13C



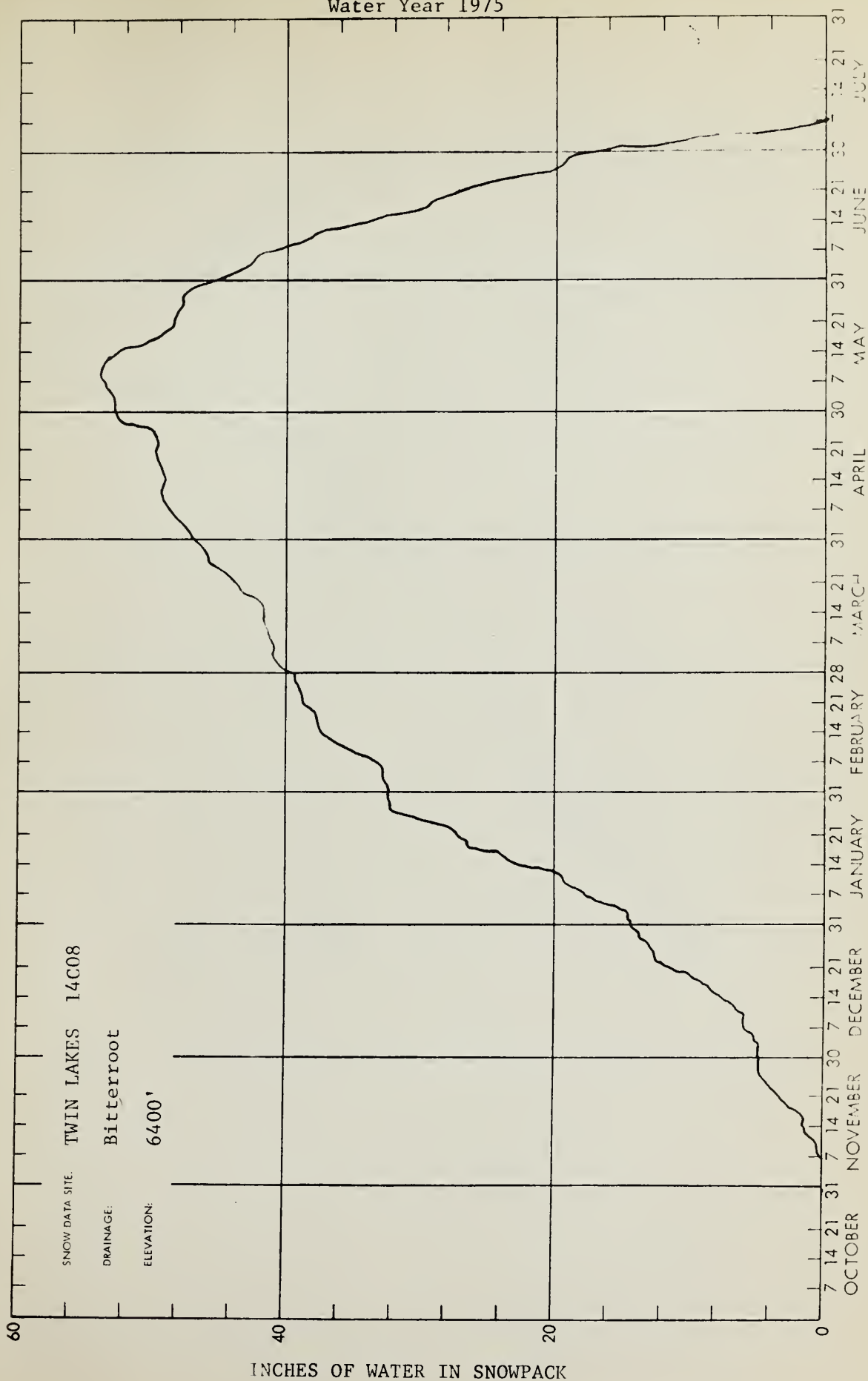


# SNOW PILLOW DATA Water Year 1975





# SNOW PILLOW DATA Water Year 1975

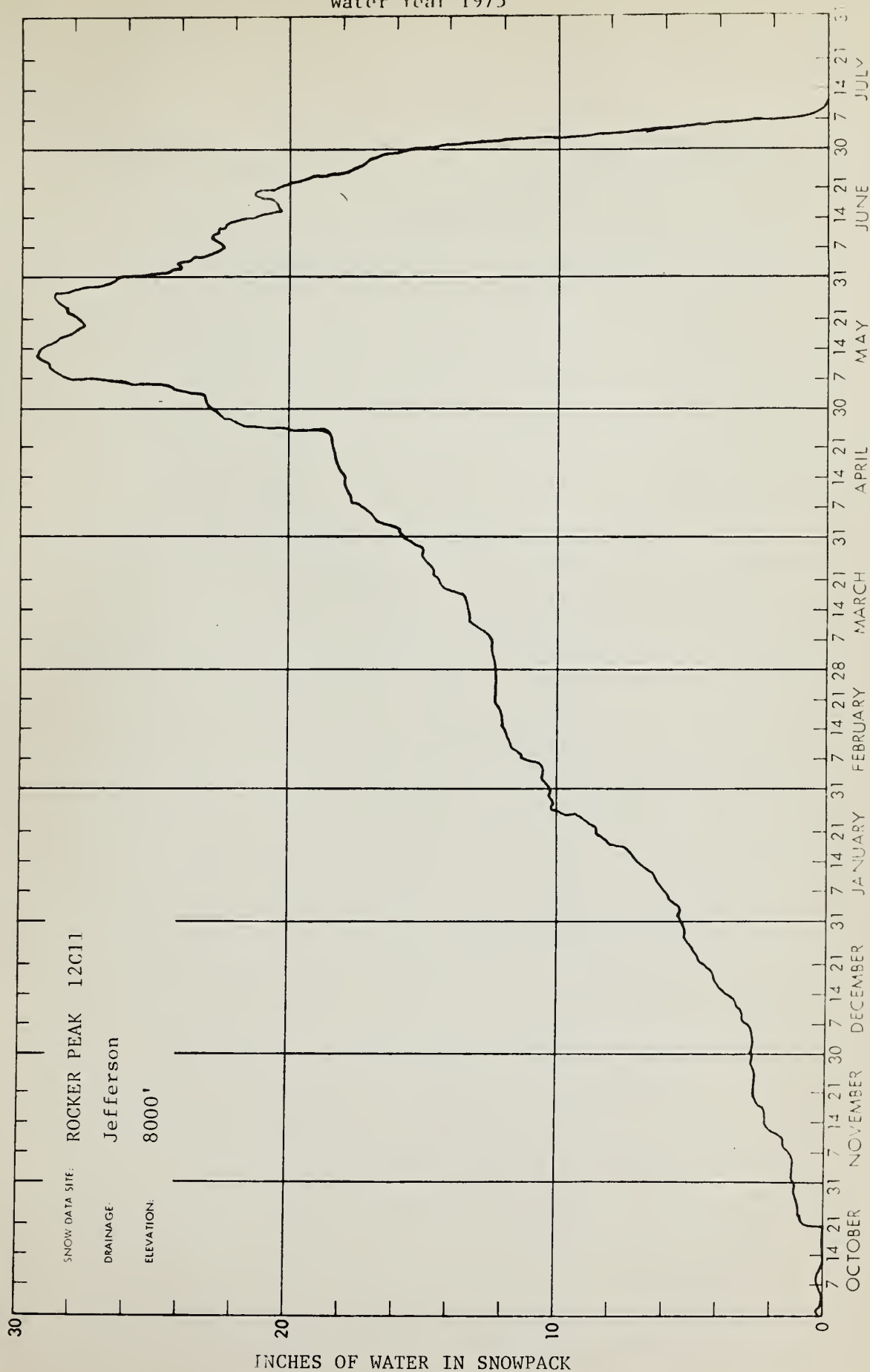


INCHES OF WATER IN SNOWPACK





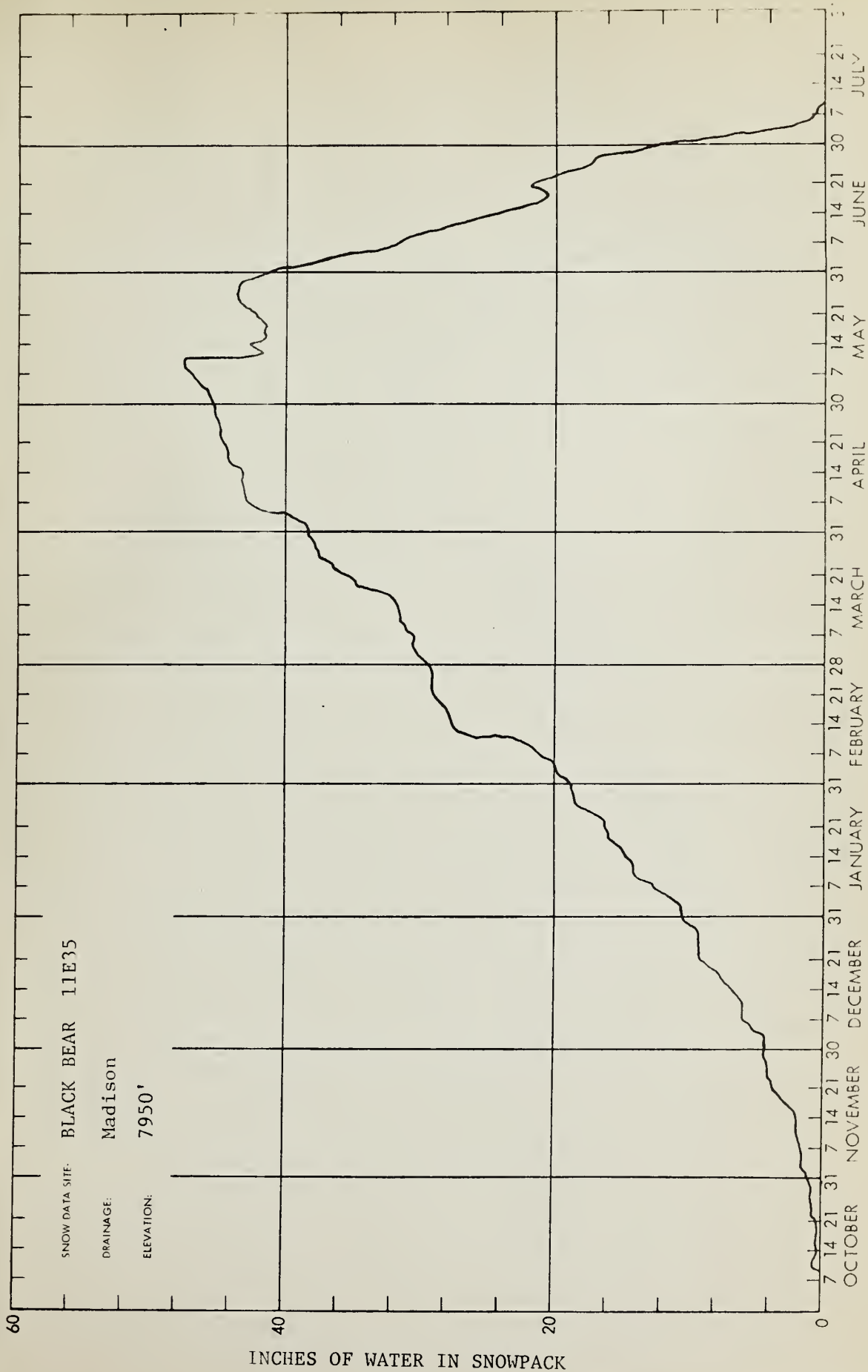
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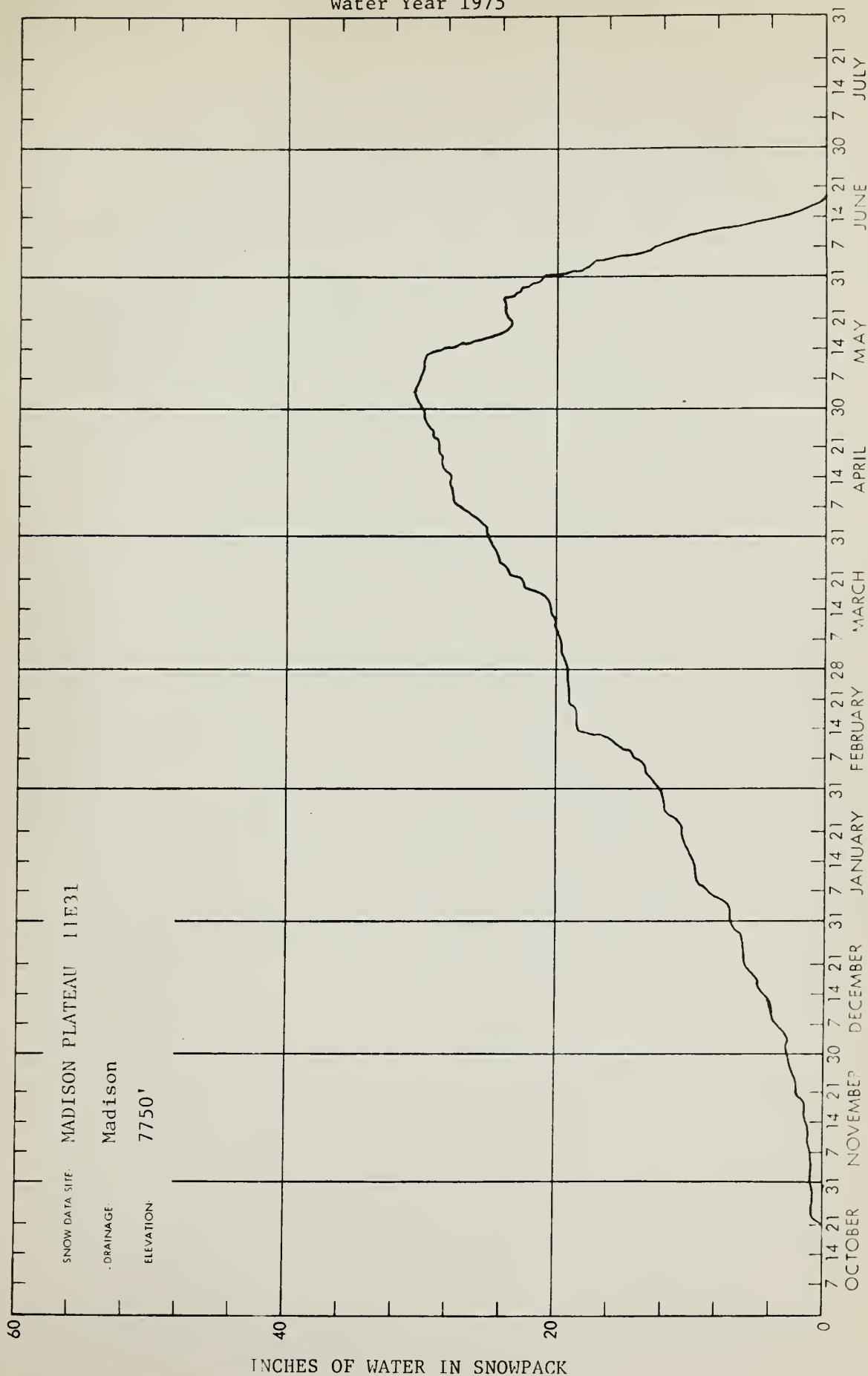
SNOW PILLOW DATA  
Water Year 1975

WSFB-X13C



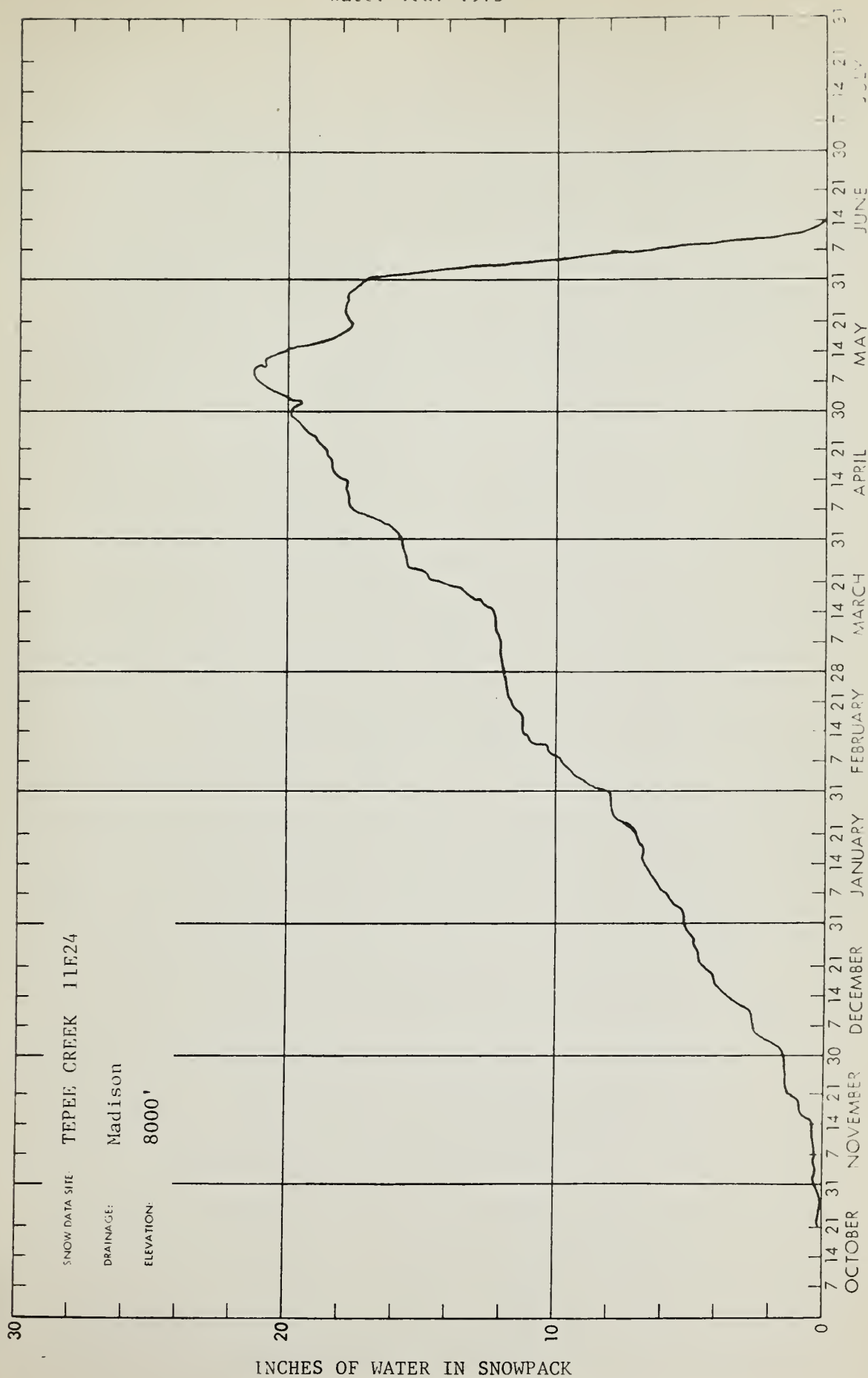


SNOW PILLOW DATA  
Water Year 1975





SNOW PILLOW DATA  
Water Year 1975

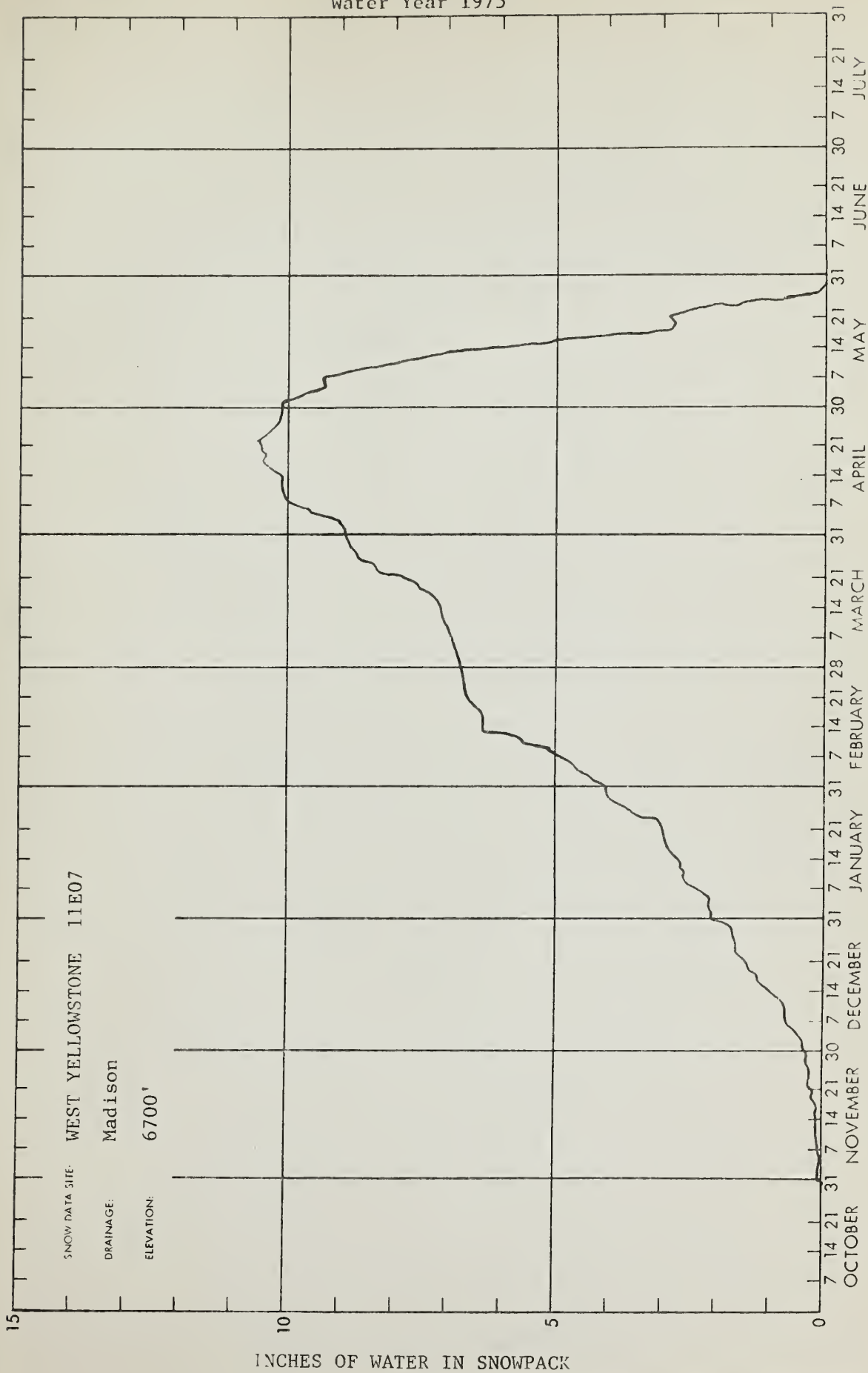


INCHES OF WATER IN SNOWPACK





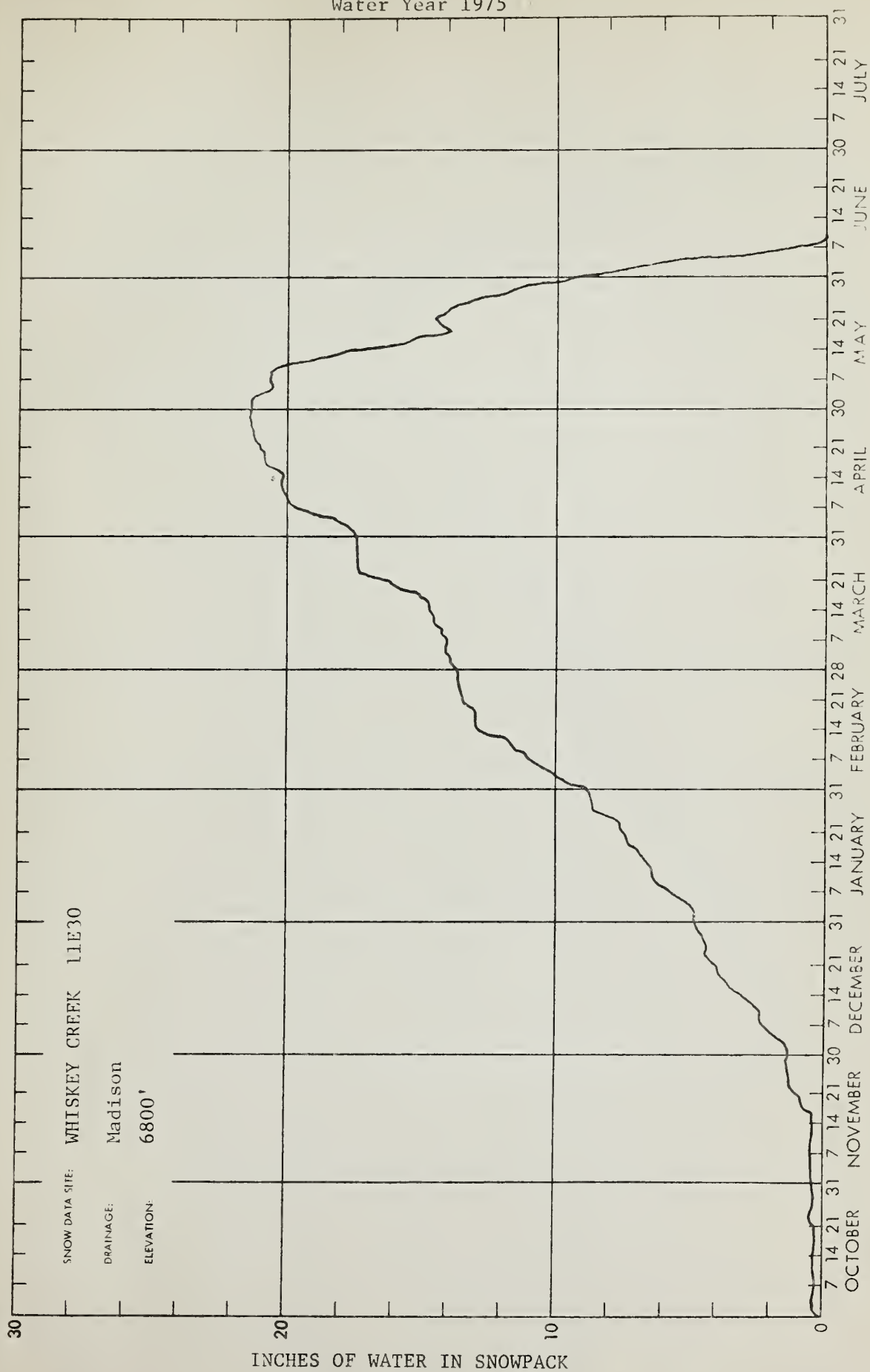
SNOW PILLOW DATA  
Water Year 1975



INCHES OF WATER IN SNOWPACK



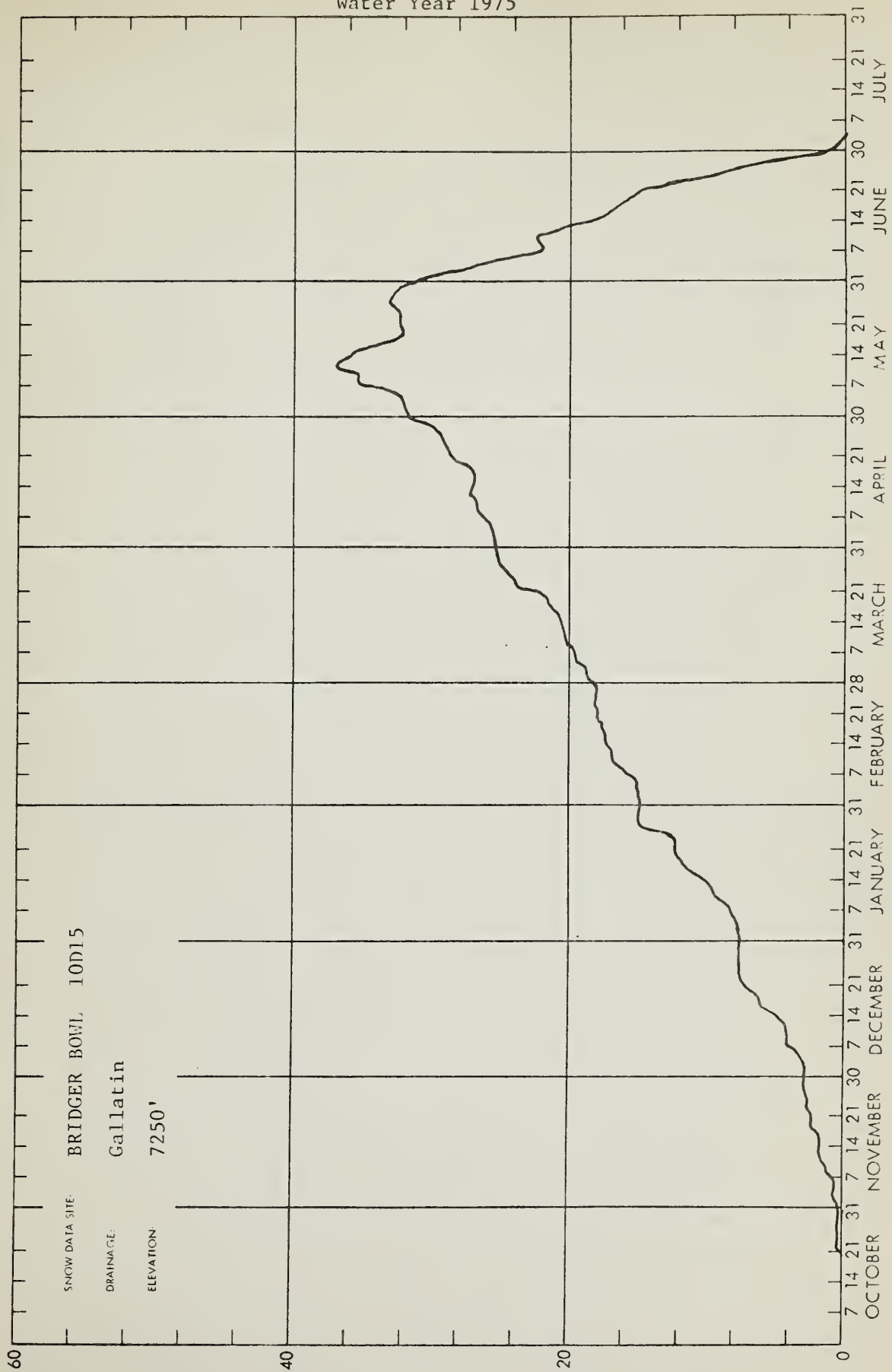
# SNOW PILLOW DATA Water Year 1975





# SNOW PILLOW DATA Water Year 1975

WSFB-X13C

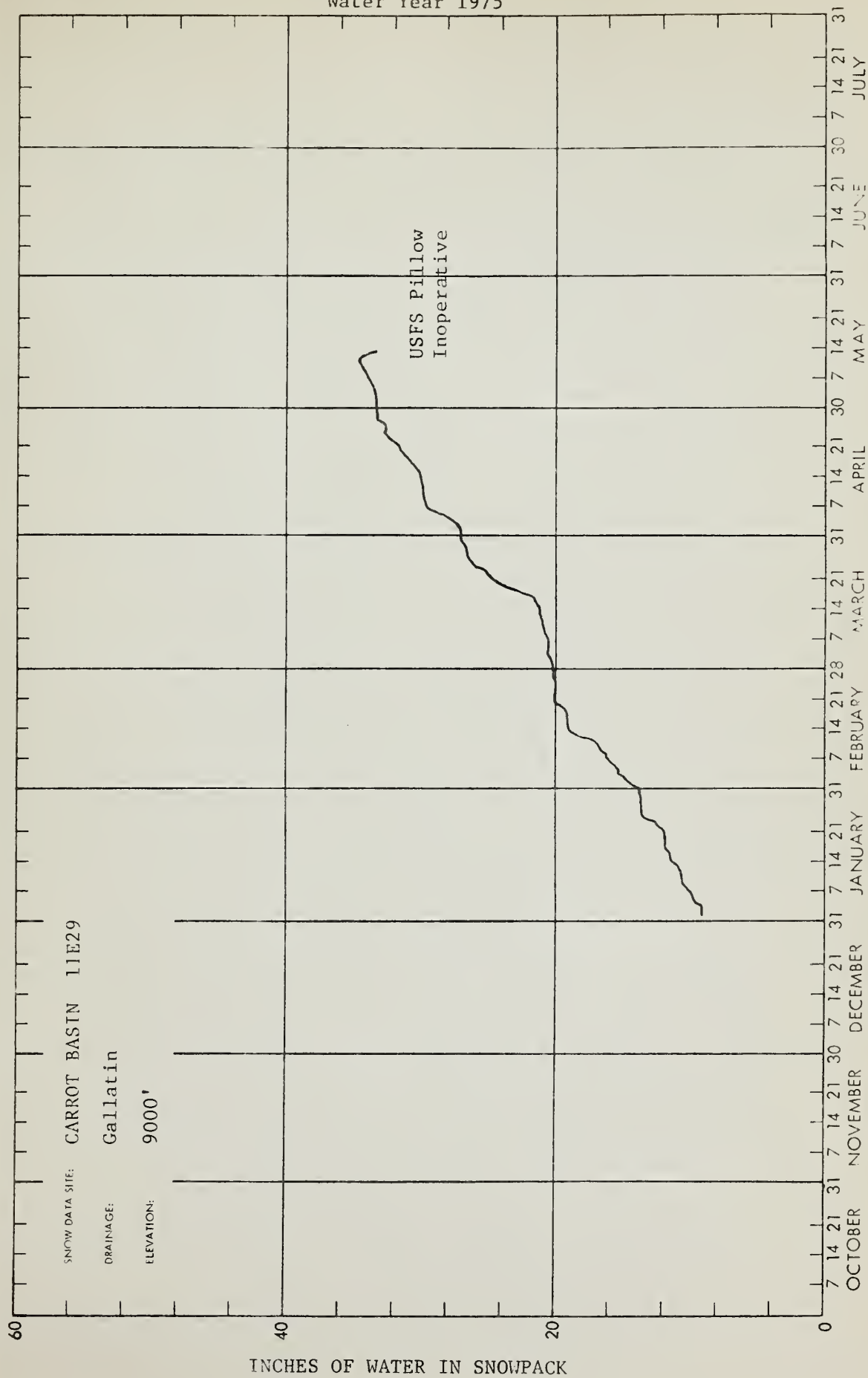


INCHES OF WATER IN SNOWPACK



SNOW PILLOW DATA  
Water Year 1975

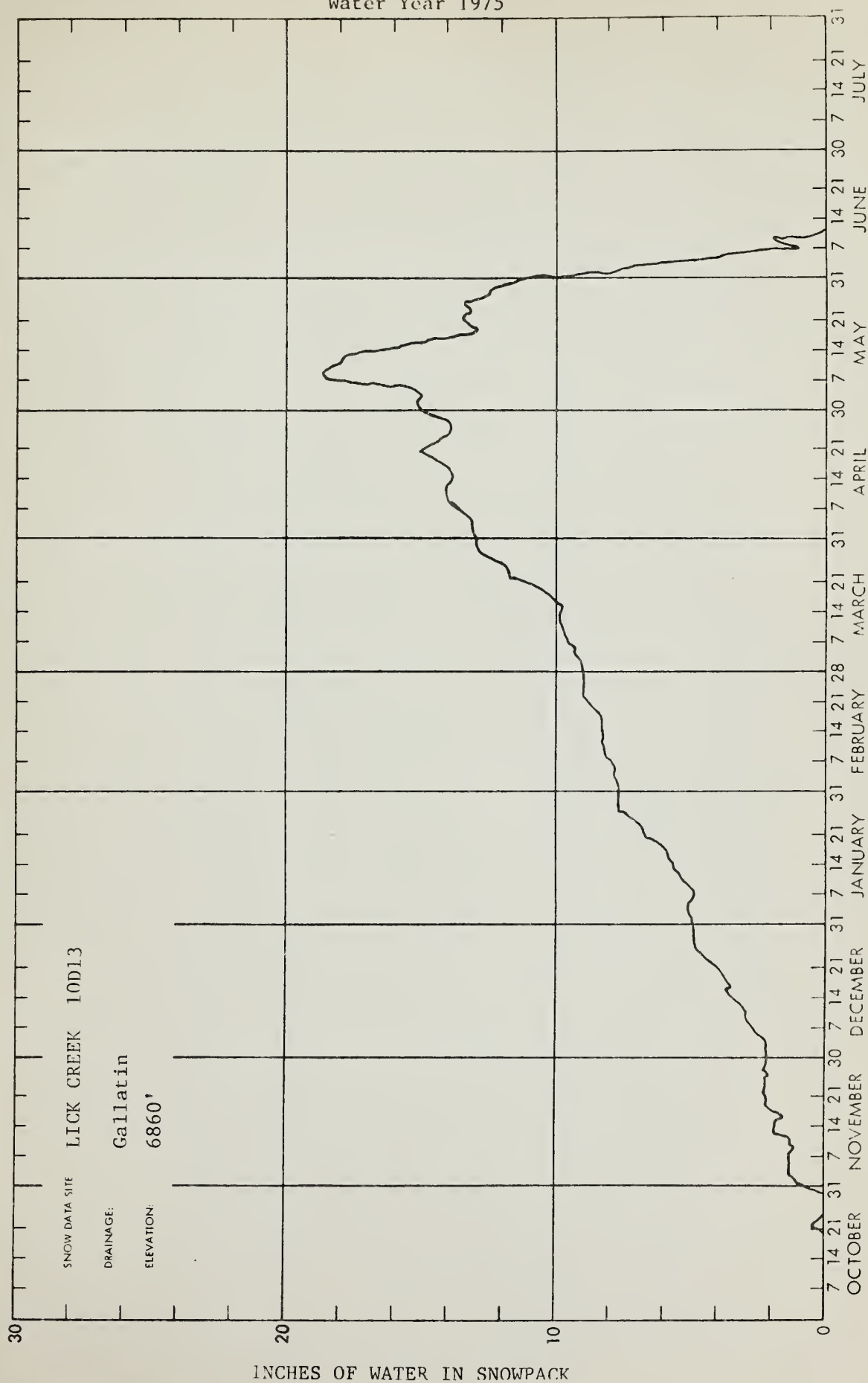
WSFB-X13C







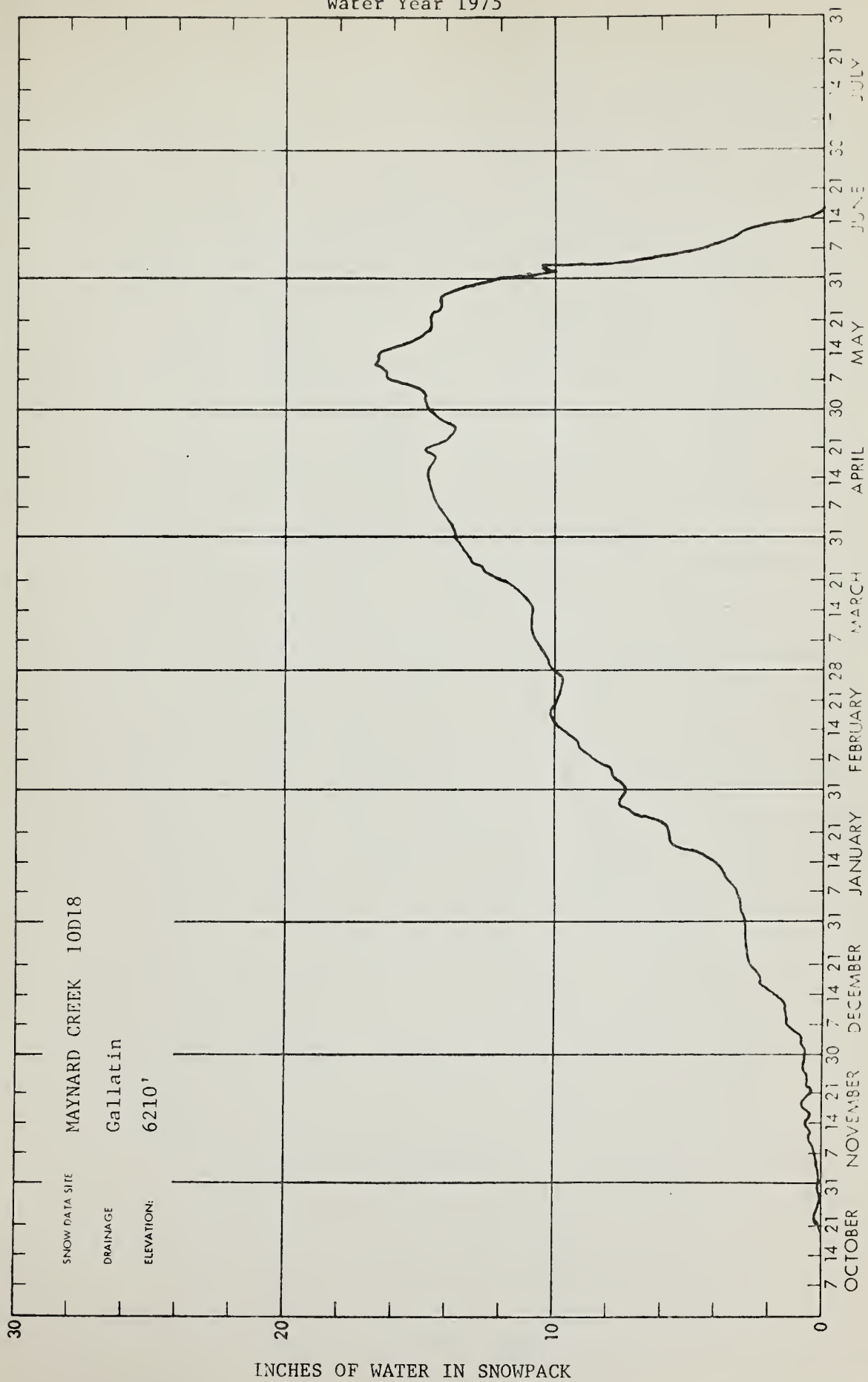
SNOW PILLOW DATA  
Water Year 1975





SNOW PILLOW DATA  
Water Year 1975

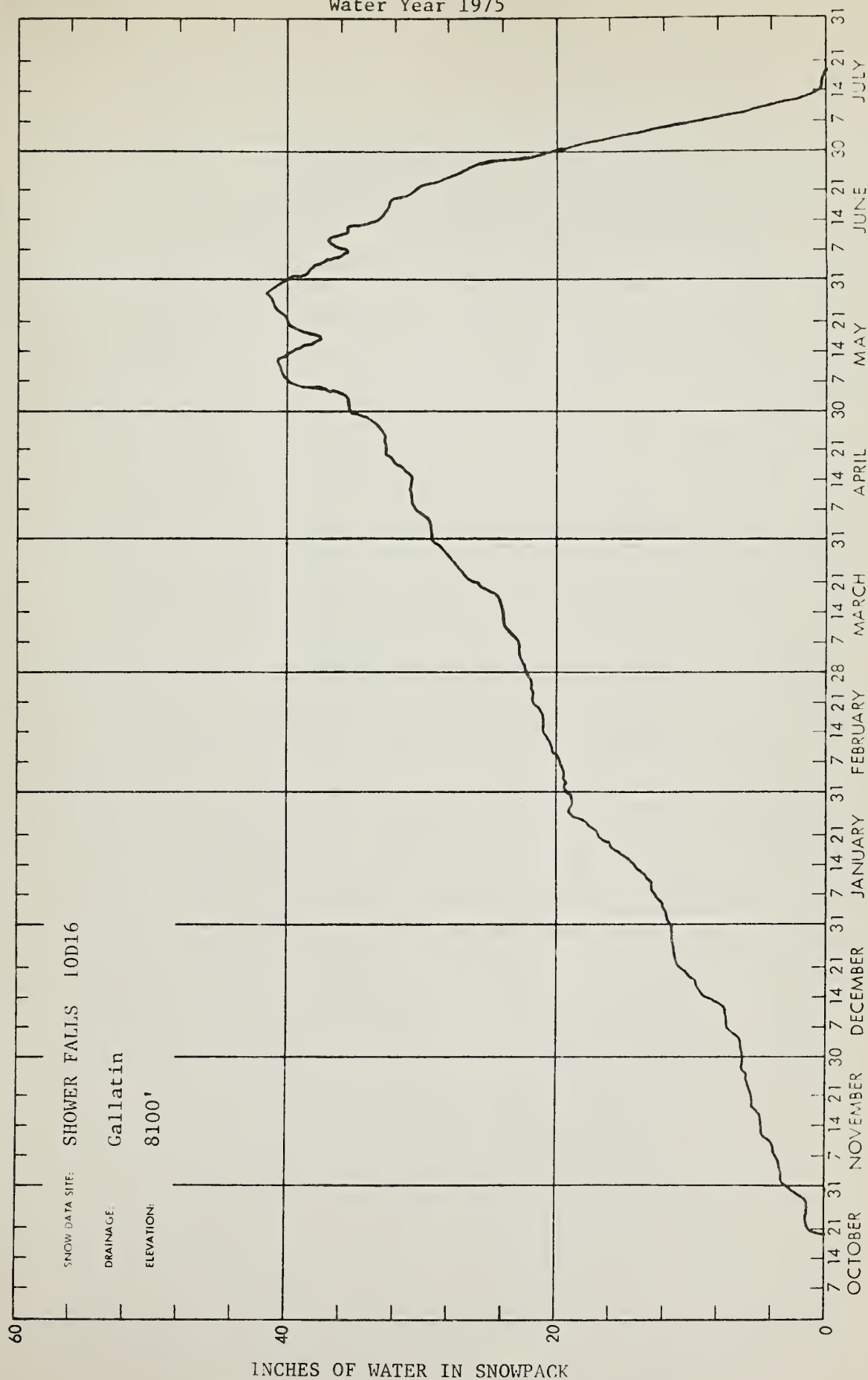
WSFB-X138



INCHES OF WATER IN SNOWPACK



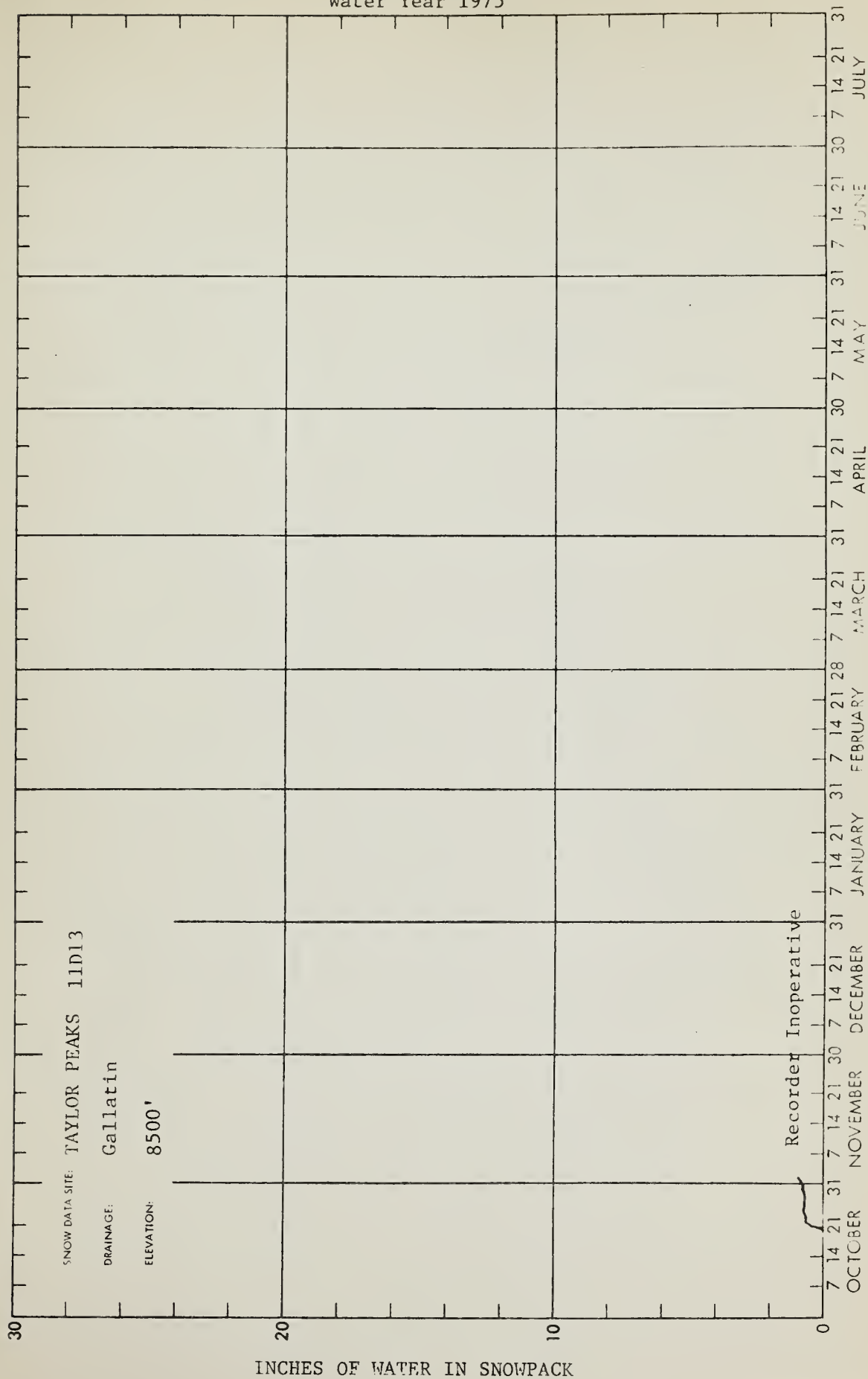
# SNOW PILLOW DATA Water Year 1975





SNOW PILLOW DATA  
Water Year 1975

WSFB-X13B

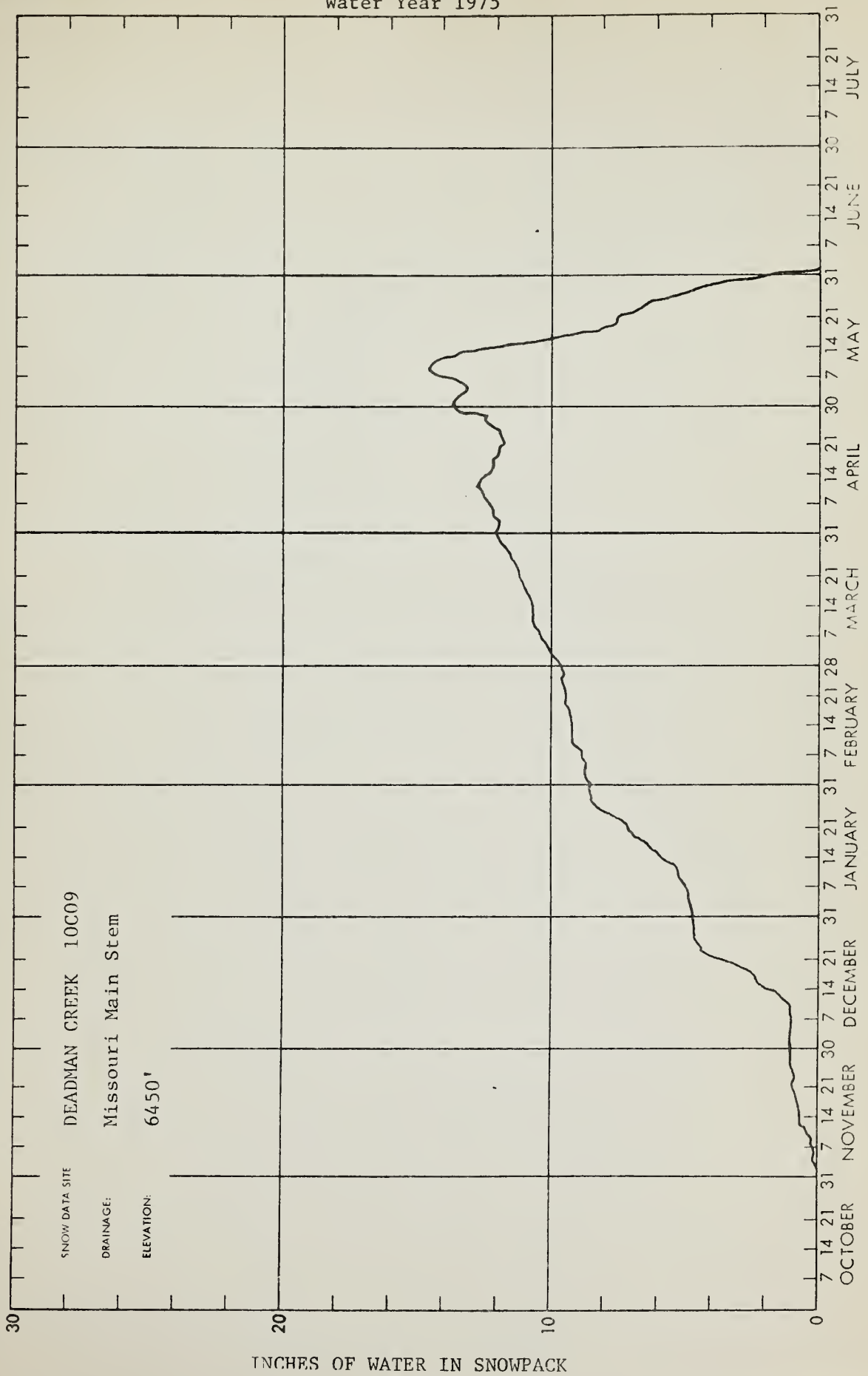






SNOW PILLOW DATA  
Water Year 1975

WSFB-X138

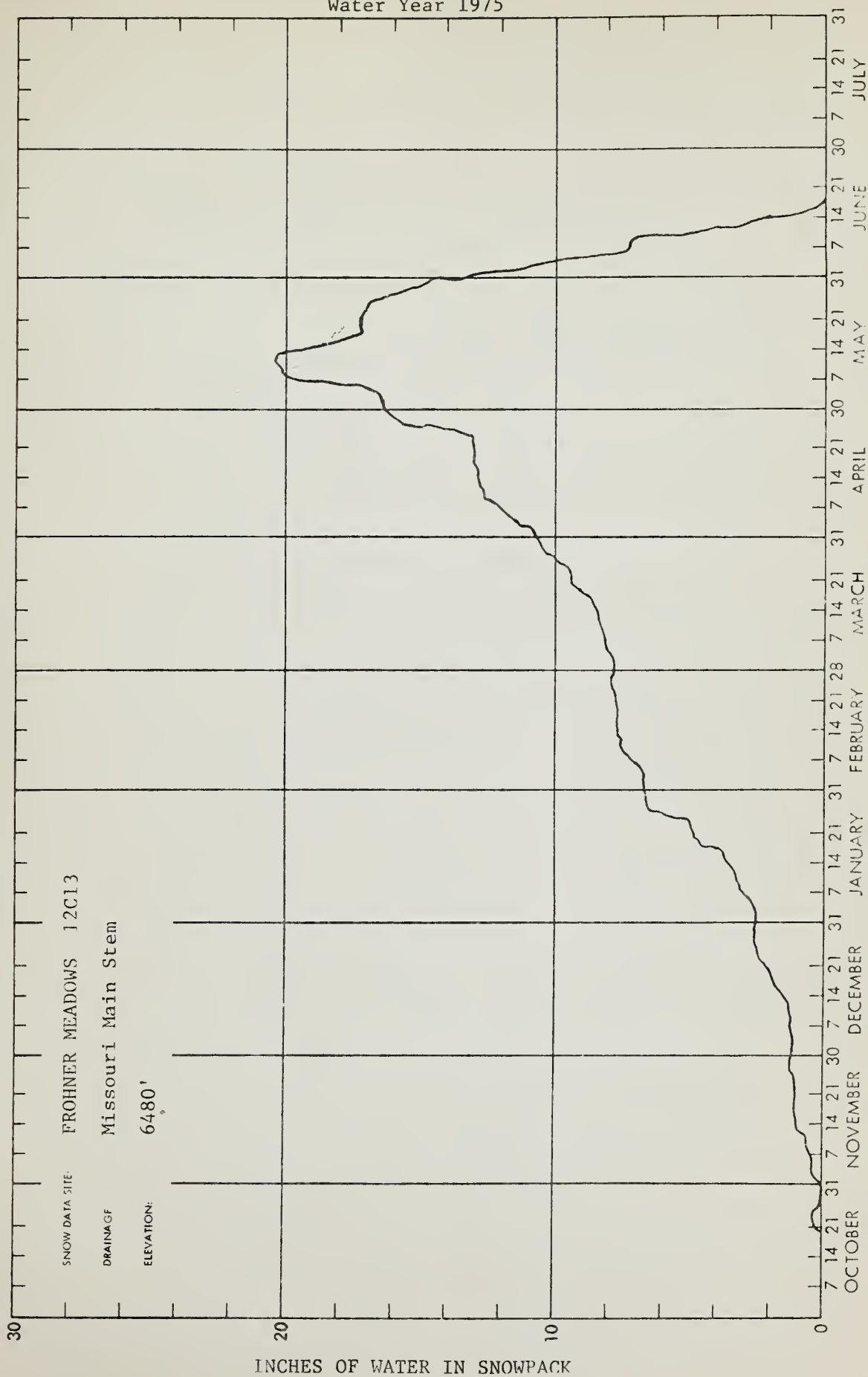


INCHES OF WATER IN SNOWPACK



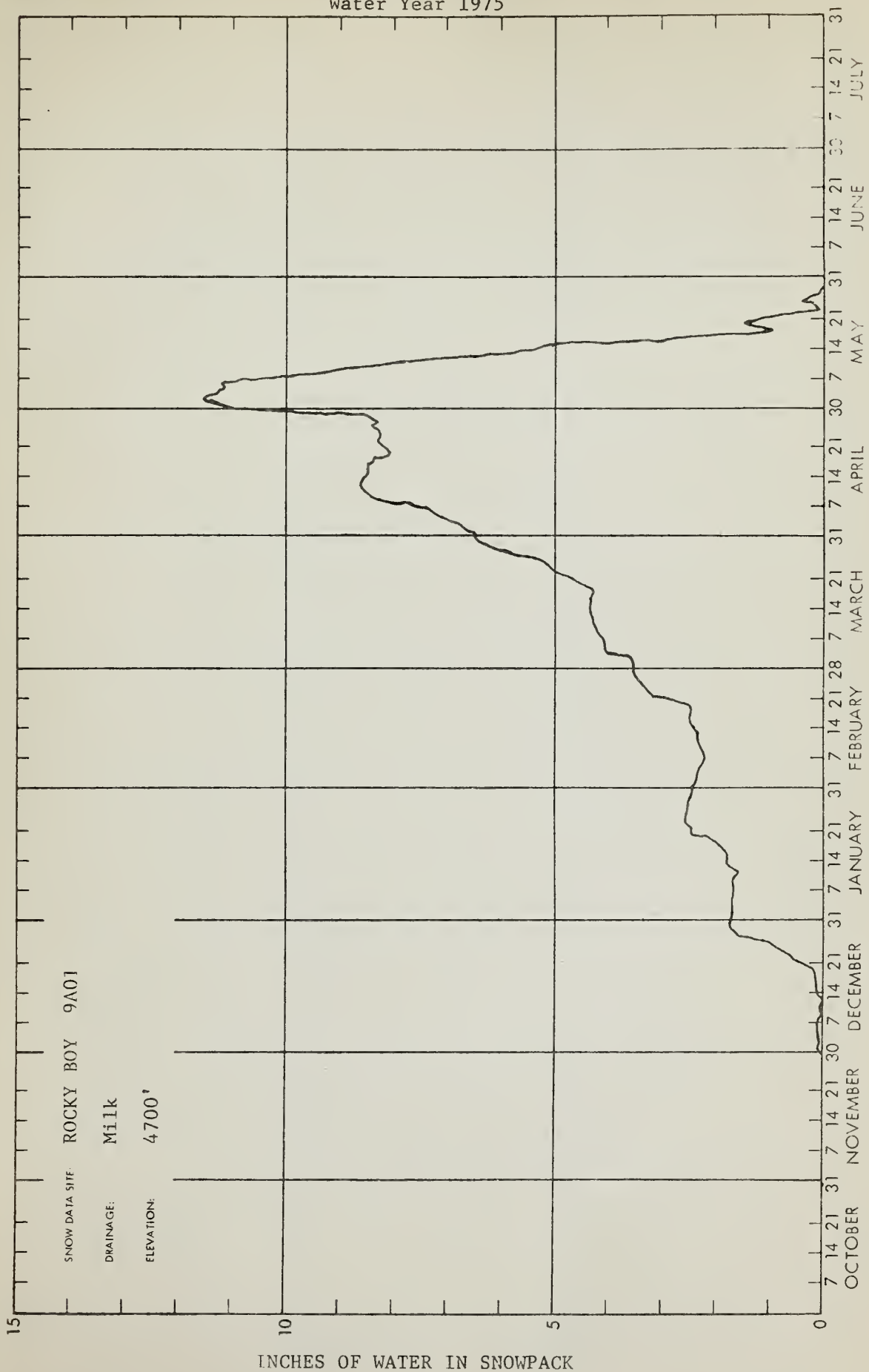
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WSFB-X13B





SNOW PILLOW DATA  
Water Year 1975

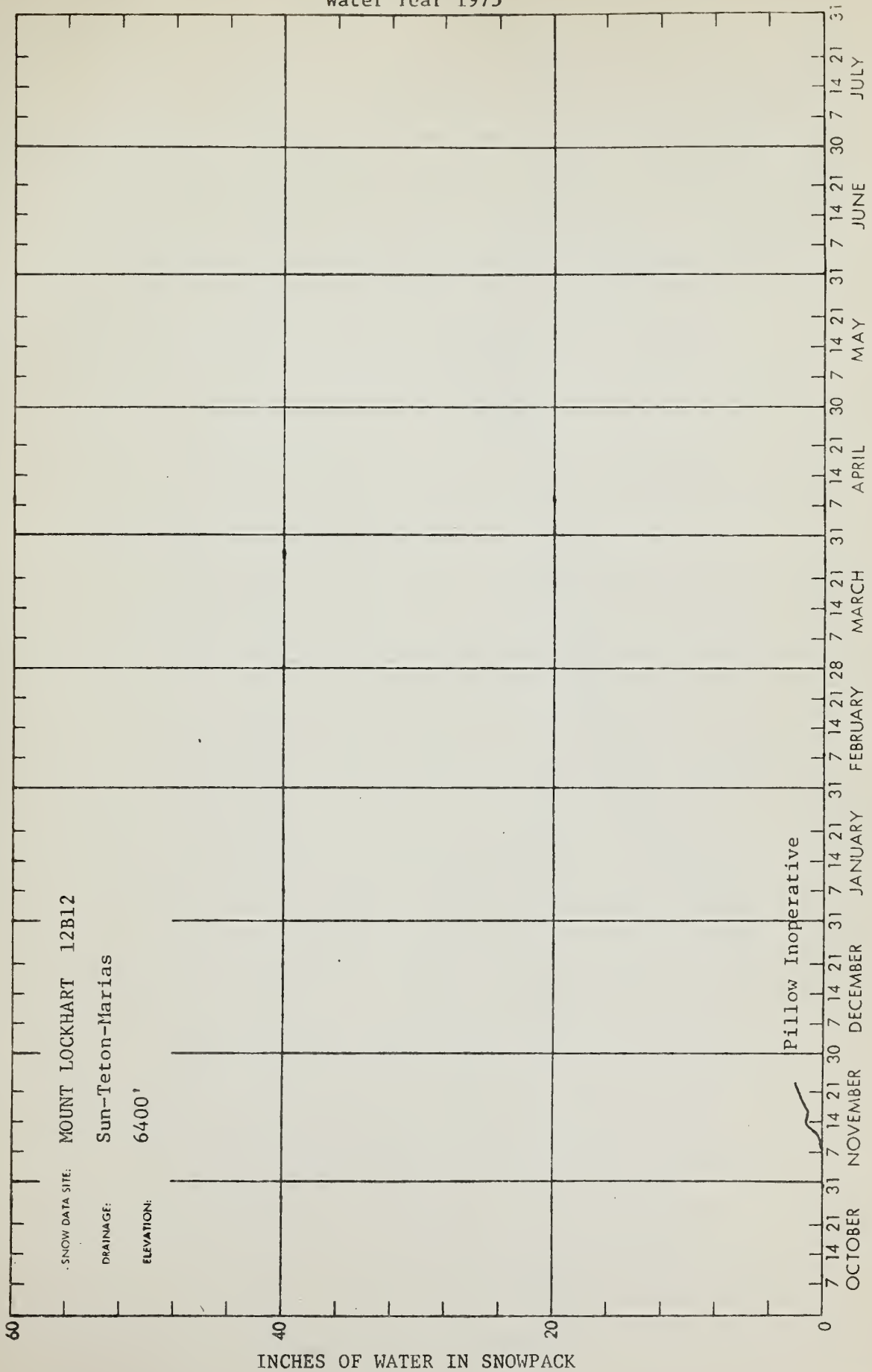


INCHES OF WATER IN SNOWPACK



SNOW PILLOW DATA  
Water Year 1975

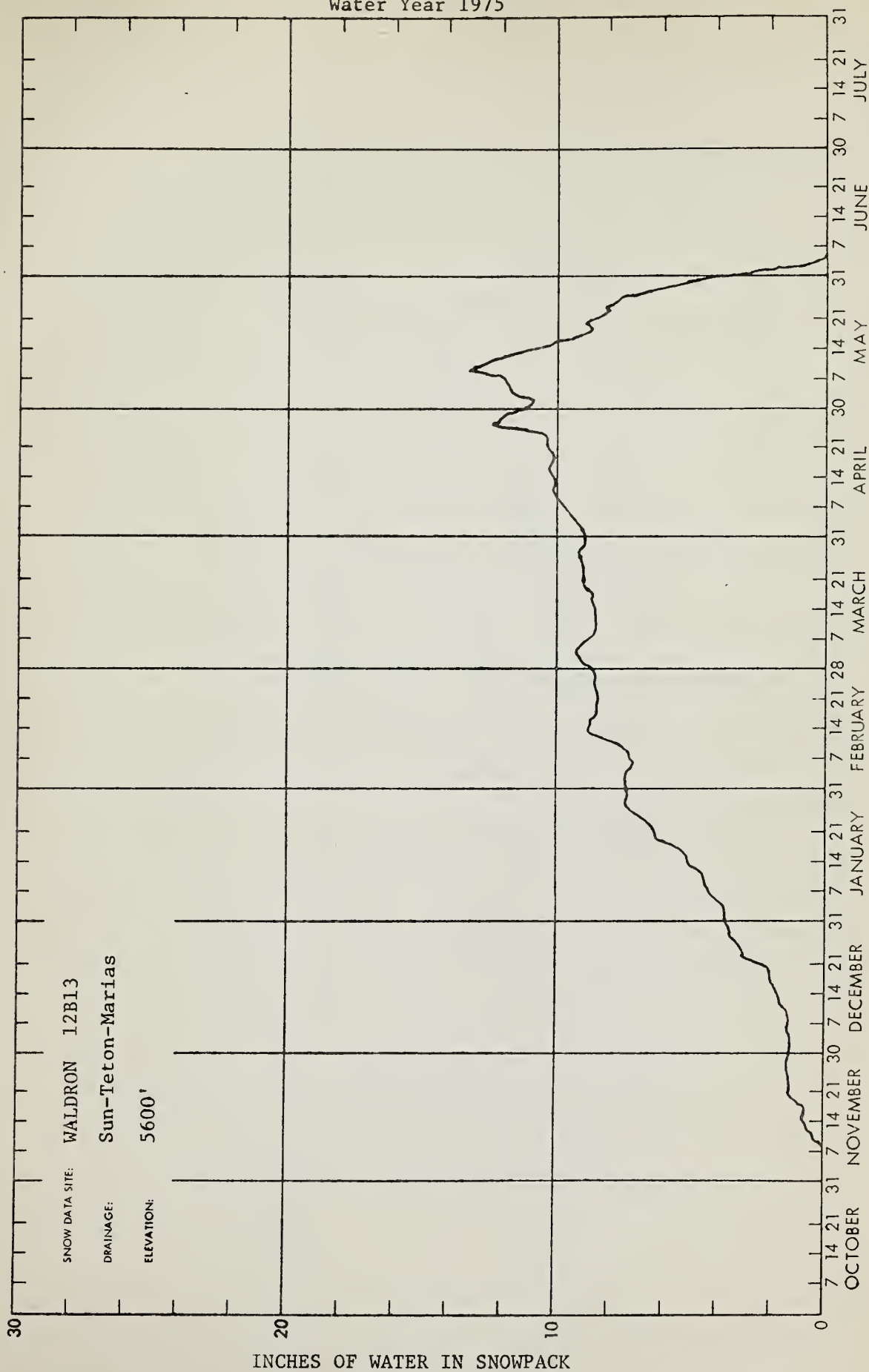
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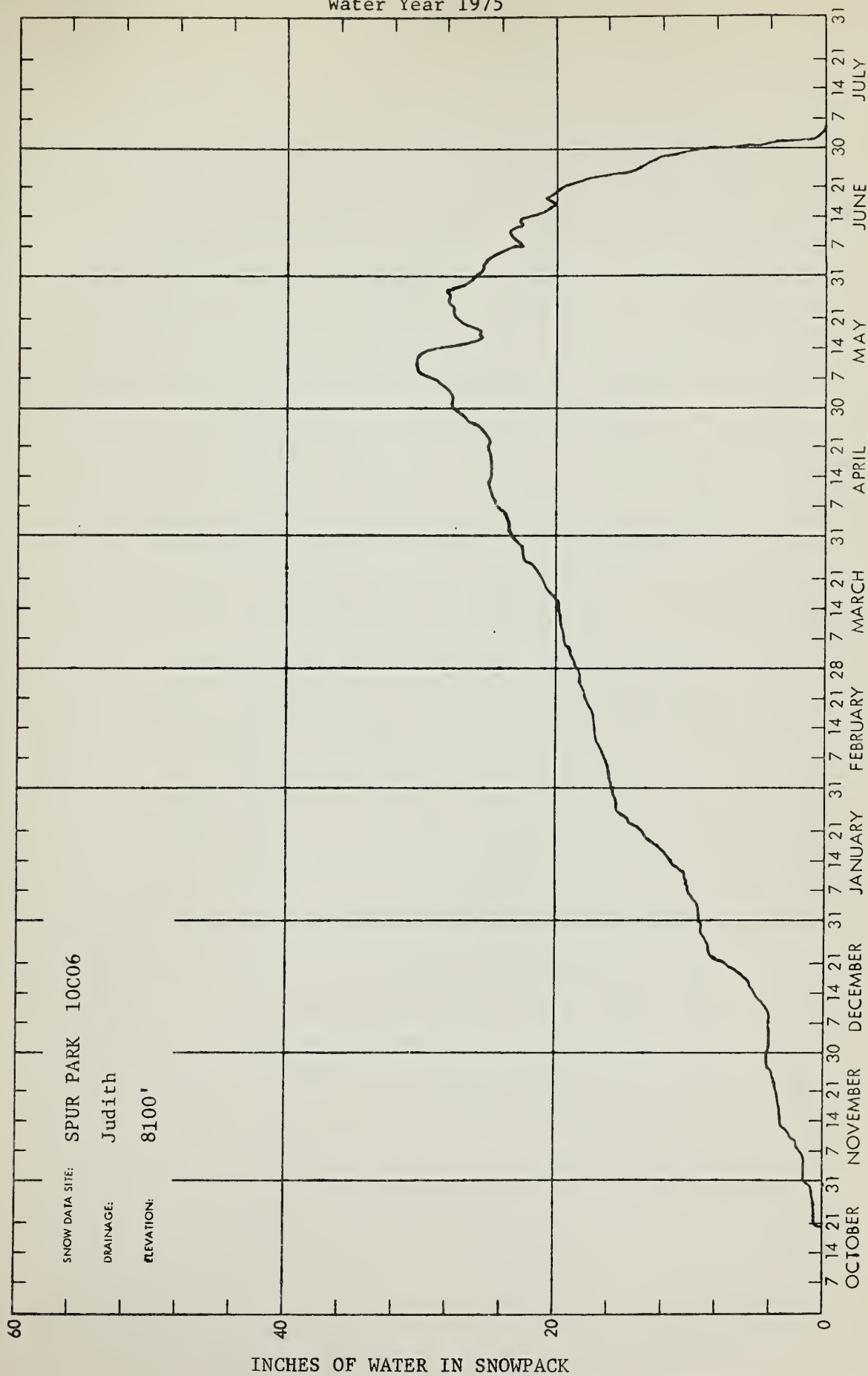


INCHES OF WATER IN SNOWPACK



SNOW PILLOW DATA  
Water Year 1975

WSFB-X13C

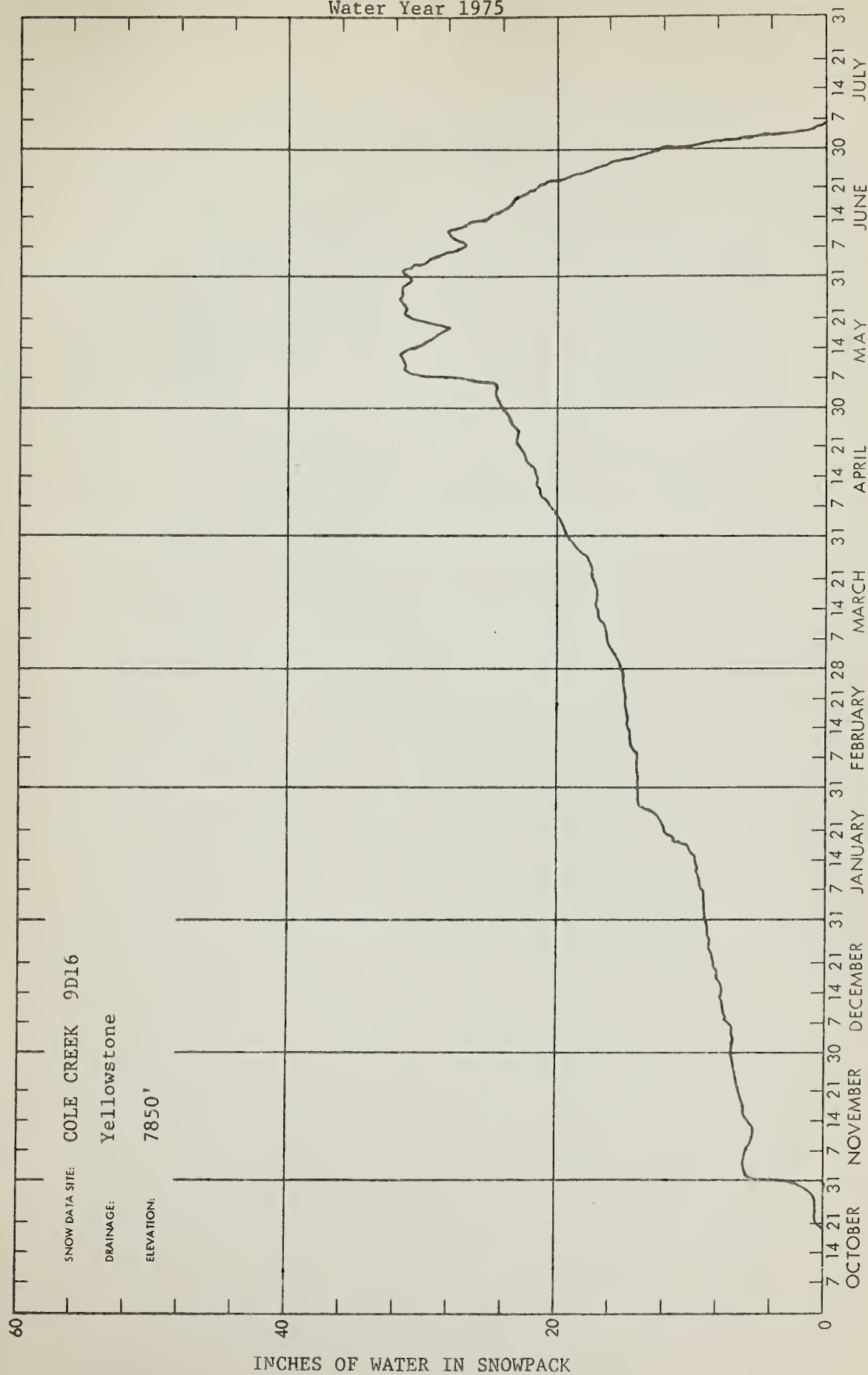


INCHES OF WATER IN SNOWPACK



SNOW PILLOW DATA  
Water Year 1975

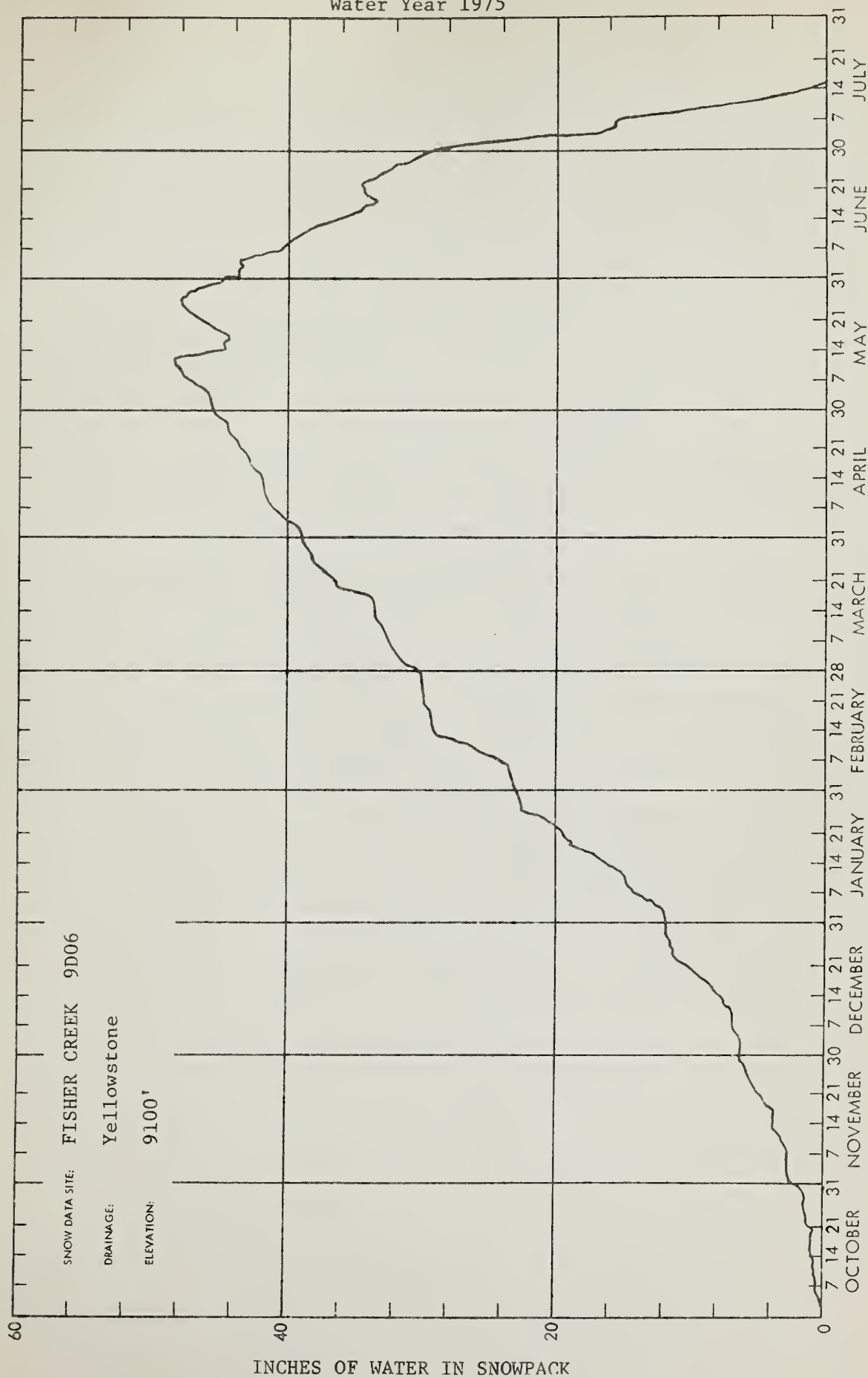
WSFB-X13C





SNOW PILLOW DATA  
Water Year 1975

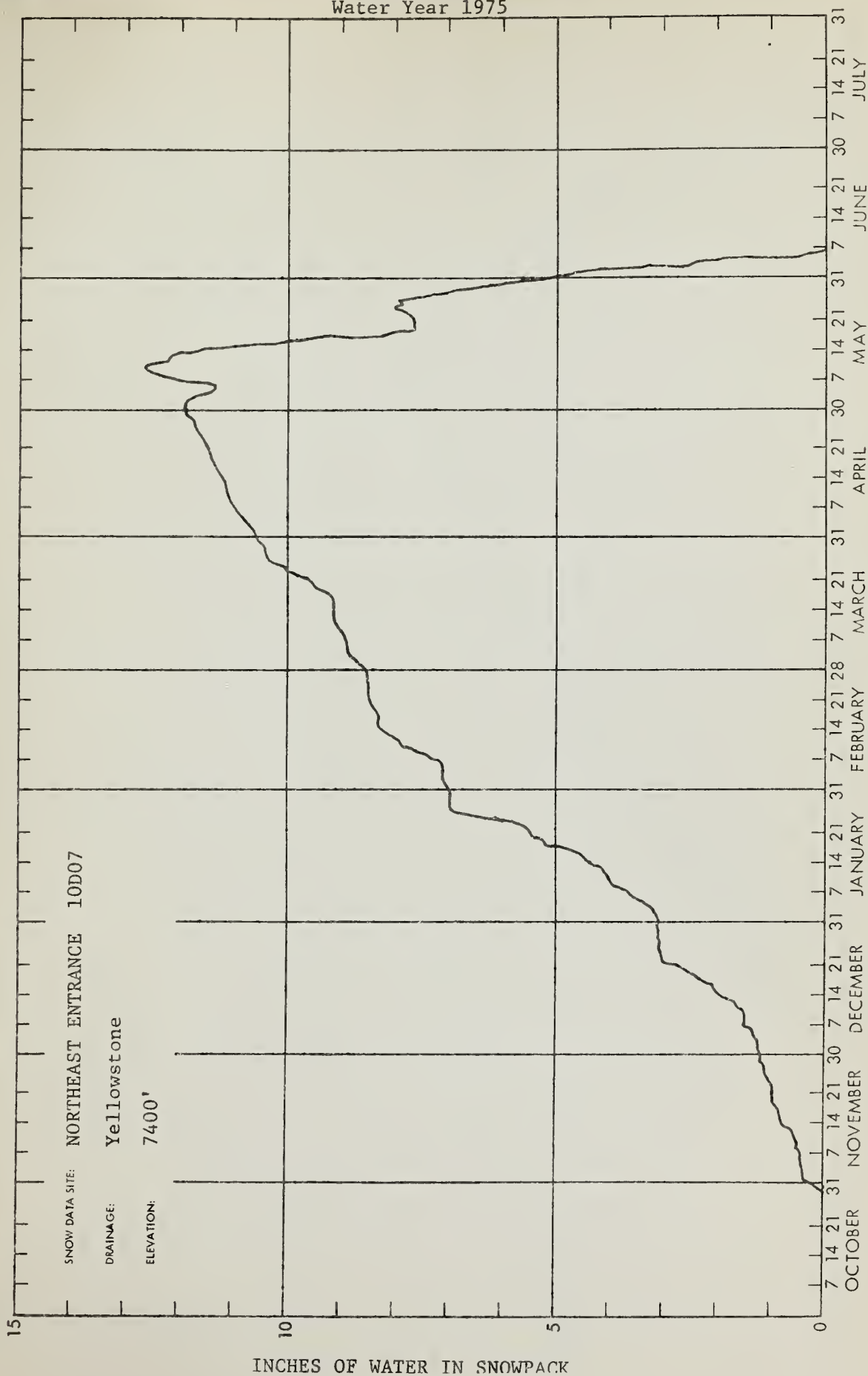
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SNOW PILLOW DATA  
Water Year 1975



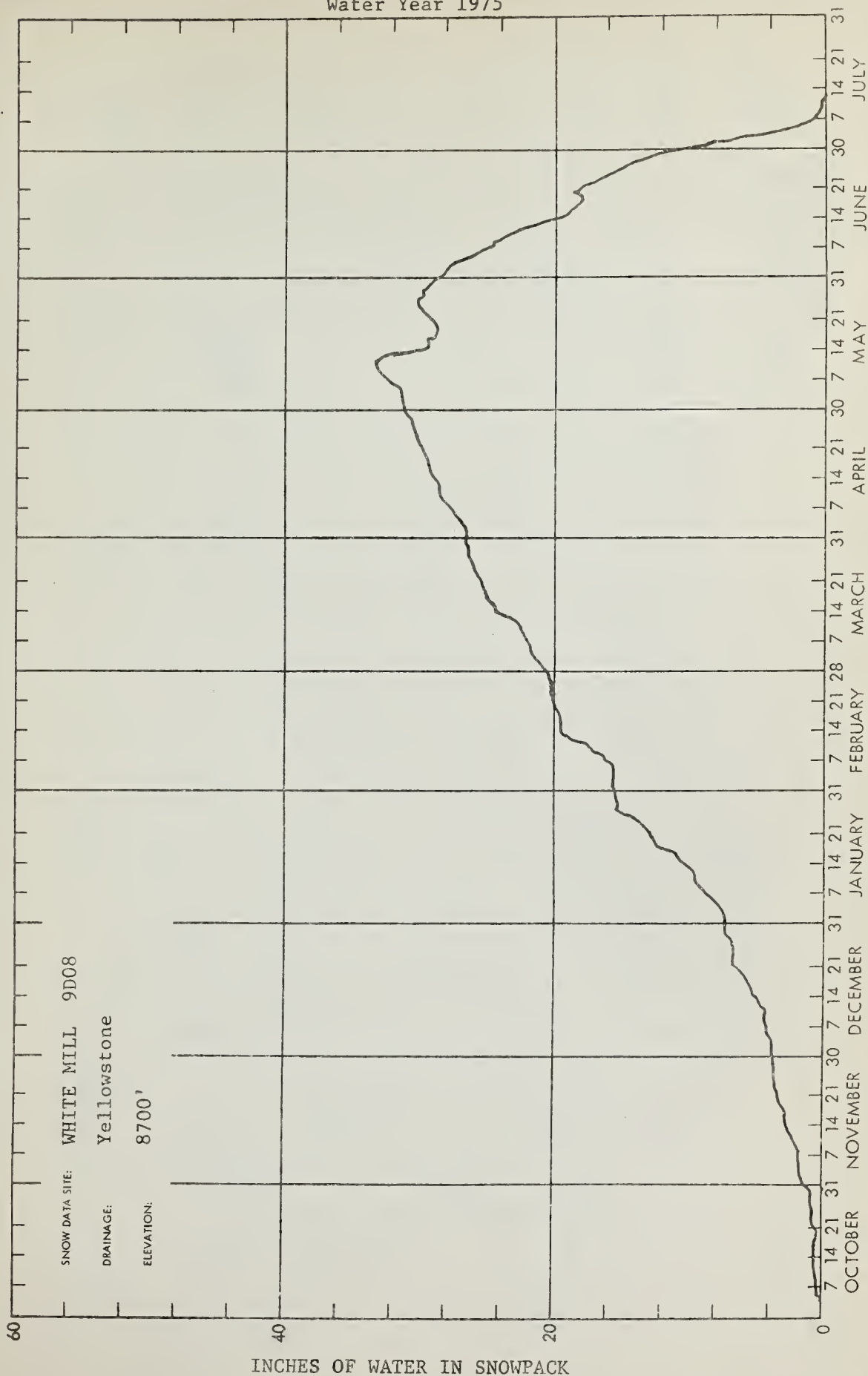
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INCHES OF WATER IN SNOWPACK

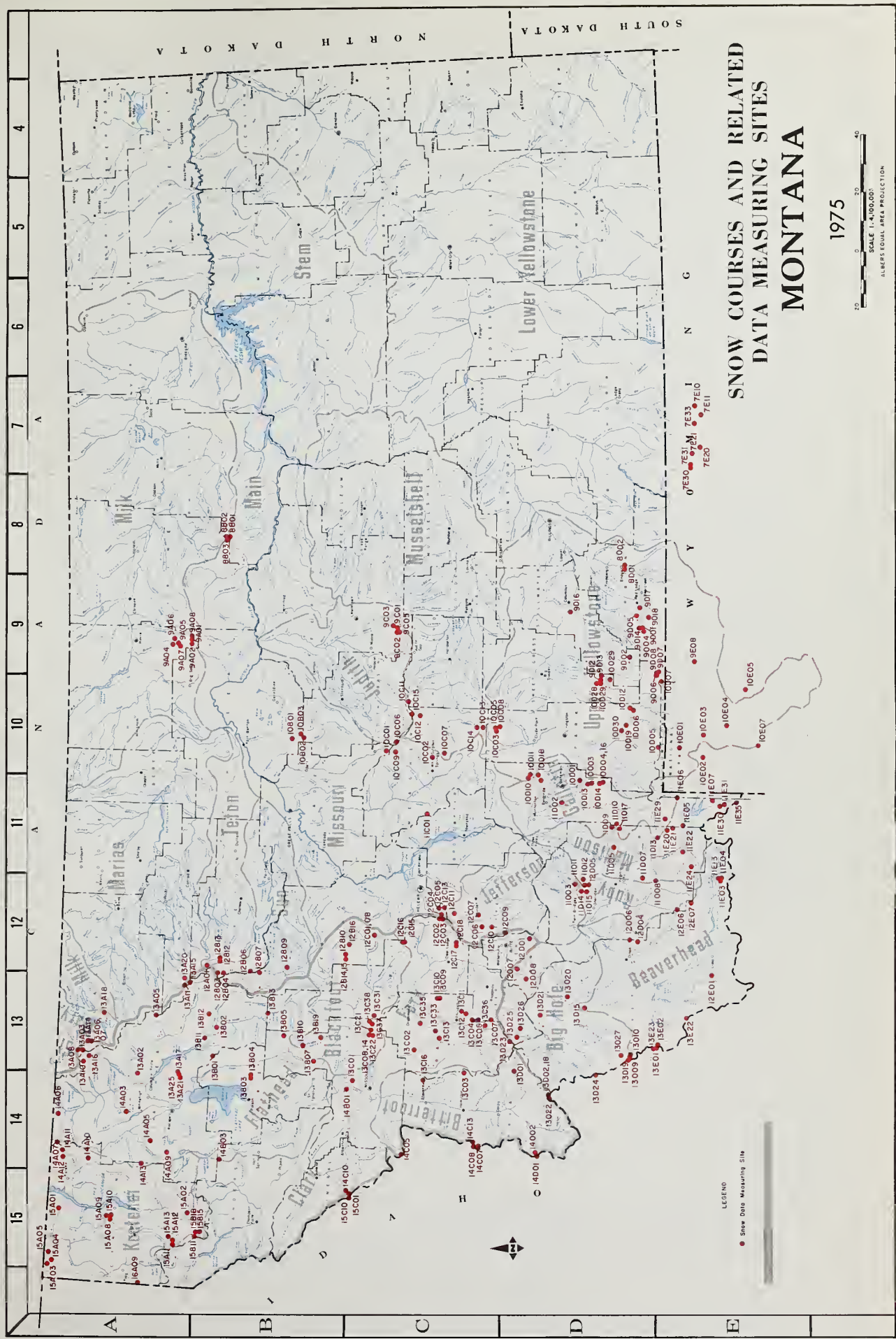


SNOW PILLOW DATA  
Water Year 1975

WSFB-X13C







# SNOW COURSES AND RELATED DATA MEASURING SITES MONTANA

1975

SCALE 1:4,000,000  
SILVER EQUAL AREA PROJECTION



INDEX to MONTANA SNOW COURSES and DATA SITES

Number	Elev.	Sec.	Twp.	Range	Seasons In Addition to Snow Course		Nearest 1/8 by 1/4
					Snow Course	U/	

COLUMBIA RIVER BASIN

KOOTENAI RIVER	15411	5700	6	27N	31W	S.P.	1	3,4,5,53,6	1
	15408	5500	4	28N	30W		2	2,3,4,5,53,6	1
	15407	5400	21	28N	30W		2	3,4,5,53,6	2
	15381	4400	31	26N	30W	H	2	3,4,5,53,6	2
	15315	3800	5	23N	30W		1	3,4,5,53,6	1
	15309	3700	12	20N	26W		1,2	3,4,5	1,2
	15303	4000	35	28N	31W		2	2,3,4,5,53,6	1
	15302	4200	41	27N	32W		1	2,3,4,5,53,6	1
	15301	4300	1	36N	32W	S.P.	1	3,4,5,53,6	1
	15300	4400	18	37N	33W	S.P.	1	3,4,5,53,6	1
	15299	4800	31	33N	29W		2	2,3,4,5,53,6	2
	15298	4000	5	34N	25W	H,N,S,C	2	Nonhly	2
	15297	3000	2	26N	29W	H,N,S,C	2	Nonhly	2
	15296	4000	4	36N	29W	H,N,S,C	2	3,4,5,53,6	2
	15295	4500	5	37N	26W		1	3,4,5,53,6	1
FLATHEAD RIVER	15403	5100	11	24N	25W		5	3,4,5	5
	15402	3900	31	28N	11W		3	3,4,5	3
	15401	4600	30	22N	18W		1,5	3,4,5	1,5
	15399	4600	30	22N	18W		1,5	3,4,5	1,5
	15398	3600	24	31N	19W	H	1,2	1,2,3,4,5,6	1,2
	15396	5500	8	22N	18W		1,5	3,4,5,6	1,5
	15395	5100	11	28N	25W	S.P.	3	3,4,5	3
	15394	6300	30	26N	13W		1	3,4,5	1
	15393	6300	30	26N	13W		1	3,4,5	1
	15392	6300	30	26N	13W		1	3,4,5	1
	15391	6300	30	26N	13W		1	3,4,5	1
	15390	6300	30	26N	13W		1	3,4,5	1
	15389	6300	30	26N	13W		1	3,4,5	1
	15388	6300	30	26N	13W		1	3,4,5	1
	15387	6300	30	26N	13W		1	3,4,5	1
CLARK FORK RIVER	15413	7100	26	8N	15W	S,P,H	1	1,2,3,4,5,53,6	1
	15412	6600	7	8N	14W	S,P	1	1,2,3,4,5,53,6	1
	15411	6600	15	13N	9W		1,2	3,4,5	1,2
	15410	6600	15	13N	9W		1,2	3,4,5	1,2
	15409	6600	15	13N	9W		1,2	3,4,5	1,2
	15408	6600	15	13N	9W		1,2	3,4,5	1,2
	15407	6600	15	13N	9W		1,2	3,4,5	1,2
	15406	6600	15	13N	9W		1,2	3,4,5	1,2
	15405	6600	15	13N	9W		1,2	3,4,5	1,2
	15404	6600	15	13N	9W		1,2	3,4,5	1,2
	15403	6600	15	13N	9W		1,2	3,4,5	1,2
	15402	6600	15	13N	9W		1,2	3,4,5	1,2
	15401	6600	15	13N	9W		1,2	3,4,5	1,2
	15400	6600	15	13N	9W		1,2	3,4,5	1,2
	15399	6600	15	13N	9W		1,2	3,4,5	1,2
HUDSON RAY BASIN	15418	5800	24	36N	17W		3,9	3,4,5	3,9
	15417	5800	24	36N	17W		3,9	3,4,5	3,9
	15416	5800	24	36N	17W		3,9	3,4,5	3,9
	15415	5800	24	36N	17W		3,9	3,4,5	3,9
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	15413	5800	24	36N	17W		3,9	3,4,5	3,9
	15412	5800	24	36N	17W		3,9	3,4,5	3,9
	15411	5800	24	36N	17W		3,9	3,4,5	3,9
	15410	5800	24	36N	17W		3,9	3,4,5	3,9
	15409	5800	24	36N	17W		3,9	3,4,5	3,9
	15408	5800	24	36N	17W		3,9	3,4,5	3,9
	15407	5800	24	36N	17W		3,9	3,4,5	3,9
	15406	5800	24	36N	17W		3,9	3,4,5	3,9
	15405	5800	24	36N	17W		3,9	3,4,5	3,9
	15404	5800	24	36N	17W		3,9	3,4,5	3,9

Number	Elev.	Sec.	Twp.	Range	Seasons In Addition to Snow Course		Nearest 1/8 by 1/4
					Snow Course	U/	

MISSOURI RIVER BASIN

BEAVERHEAD RIVER	13010	7600	12	8S	16W		1	3,4,5	1
	13009	7600	12	8S	16W		1	3,4,5	1
	13008	7600	12	8S	16W		1	3,4,5	1
	13007	7600	12	8S	16W		1	3,4,5	1
	13006	7600	12	8S	16W		1	3,4,5	1
	13005	7600	12	8S	16W		1	3,4,5	1
	13004	7600	12	8S	16W		1	3,4,5	1
	13003	7600	12	8S	16W		1	3,4,5	1
	13002	7600	12	8S	16W		1	3,4,5	1
	13001	7600	12	8S	16W		1	3,4,5	1
	13000	7600	12	8S	16W		1	3,4,5	1
	12999	7600	12	8S	16W		1	3,4,5	1
	12998	7600	12	8S	16W		1	3,4,5	1
	12997	7600	12	8S	16W		1	3,4,5	1
	12996	7600	12	8S	16W		1	3,4,5	1
BIG HOLE RIVER	13008	7600	7	3S	11W		1	3,4,5	1
	13007	7600	7	3S	11W		1	3,4,5	1
	13006	7600	7	3S	11W		1	3,4,5	1
	13005	7600	7	3S	11W		1	3,4,5	1
	13004	7600	7	3S	11W		1	3,4,5	1
	13003	7600	7	3S	11W		1	3,4,5	1
	13002	7600	7	3S	11W		1	3,4,5	1
	13001	7600	7	3S	11W		1	3,4,5	1
	13000	7600	7	3S	11W		1	3,4,5	1
	12999	7600	7	3S	11W		1	3,4,5	1
	12998	7600	7	3S	11W		1	3,4,5	1
	12997	7600	7	3S	11W		1	3,4,5	1
	12996	7600	7	3S	11W		1	3,4,5	1
	12995	7600	7	3S	11W		1	3,4,5	1
	12994	7600	7	3S	11W		1	3,4,5	1
JEFFERSON RIVER	12007	7600	8	5N	5W		1	3,4,5,53,6	1
	12006	7600	8	5N	5W		1	3,4,5,53,6	1
	12005	7600	8	5N	5W		1	3,4,5,53,6	1
	12004	7600	8	5N	5W		1	3,4,5,53,6	1
	12003	7600	8	5N	5W		1	3,4,5,53,6	1
	12002	7600	8	5N	5W		1	3,4,5,53,6	1
	12001	7600	8	5N	5W		1	3,4,5,53,6	1
	12000	7600	8	5N	5W		1	3,4,5,53,6	1
	11999	7600	8	5N	5W		1	3,4,5,53,6	1
	11998	7600	8	5N	5W		1	3,4,5,53,6	1
	11997	7600	8	5N	5W		1	3,4,5,53,6	1
	11996	7600	8	5N	5W		1	3,4,5,53,6	1
	11995	7600	8	5N	5W		1	3,4,5,53,6	1
	11994	7600	8	5N	5W		1	3,4,5,53,6	1
	11993	7600	8	5N	5W		1	3,4,5,53,6	1
GALLATIN RIVER	10014	7300	3	5S	4E		1	1,2,3,4,5,53,6	1
	10013	7300	3	5S	4E		1	1,2,3,4,5,53,6	1
	10012	7300	3	5S	4E		1	1,2,3,4,5,53,6	1
	10011	7300	3	5S	4E		1	1,2,3,4,5,53,6	1
	10010	7300	3	5S	4E		1	1,2,3,4,5,53,6	1
	10009	7300	3	5S	4E		1	1,2,3,4,5,53,6	1
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	10004	7300	3	5S	4E		1	1,2,3,4,5,53,6	1
	10003	7300	3	5S	4E		1	1,2,3,4,5,53,6	1
	10002	7300	3	5S	4E		1	1,2,3,4,5,53,6	1
	10001	7300	3	5S	4E		1	1,2,3,4,5,53,6	1
	10000	7300	3	5S	4E		1	1,2,3,4,5,53,6	1

Number	Elev.	Sec.	Twp.	Range	Seasons In Addition to Snow Course		Nearest 1/8 by 1/4
					Snow Course	U/	

TETON - MARIAS RIVERS	13415	6900	4	27N	11W	A			
	13414	6900	25	28N	10W	A			
	13413	6900	25	28N	10W	A			
	13412	6900	25	28N	10W	A			
	13411	6900	25	28N	10W	A			
	13410	6900	25	28N	10W	A			
	13409	6900	25	28N	10W	A			
	13408	6900	25	28N	10W	A			
	13407	6900	25	28N	10W	A			
	13406	6900	25	28N	10W	A			
	13405	6900	25	28N	10W	A			
	13404	6900	25	28N	10W	A			
	13403	6900	25	28N	10W	A			
	13402	6900	25	28N	10W	A			
	13401	6900	25	28N	10W	A			
	13400	6900	25	28N	10W	A			
JUDITH RIVER	9002	7100	24	12N	17E		1	3,4,5	
	9003	7100	25	12N	17E		1	3,4,5	
	9004	7100	25	12N	17E		1	3,4,5	
	9005	7100	25	12N	17E		1	3,4,5	
	9006	7100	25	12N	17E		1	3,4,5	
	9007	7100	25	12N	17E		1	3,4,5	
	9008	7100	25	12N	17E		1	3,4,5	
	9009	7100	25	12N	17E		1	3,4,5	
	9010	7100	25	12N	17E		1	3,4,5	
	9011	7100	25	12N	17E		1	3,4,5	
	9012	7100	25	12N	17E		1	3,4,5	
	9013	7100	25	12N	17E		1	3,4,5	
	9014	7100	25	12N	17E		1	3,4,5	
	9015	7100	25	12N	17E		1	3,4,5	
	9016	7100	25	12N	17E		1	3,4,5	
	9017	7100	25	12N	17E		1	3,4,5	
MUSSEL SHELL RIVER	10015	7400	34	11N	11E		2	3,4,5	
	10016	7400	34	11N	11E		2	3,4,5	
	10017	7400	34	11N	11E		2	3,4,5	
	10018	7400	34	11N	11E		2	3,4,5	
	10019	7400	34	11N	11E		2	3,4,5	
	10020	7400	34	11N	11E		2	3,4,5	
	10021	7400	34	11N	11E		2	3,4,5	
	10022	7400	34	11N	11E		2	3,4,5	
	10023	7400	34	11N	11E		2	3,4,5	
	10024	7400	34	11N	11E		2	3,4,5	
	10025	7400	34	11N	11E		2	3,4,5	
	10026	7400	34	11N	11E		2	3,4,5	
	10027	7400	34	11N	11E		2	3,4,5	
	10028	7400	34	11N	11E		2	3,4,5	
	10029	7400	34	11N	11E		2	3,4,5	
	10030	7400	34	11N	11E		2	3,4,5	
MILK RIVER	9405	3900	21	28N	16E	N, SSC		Sample	1,7
	9406	3900	21	28N	16E	N, SSC		Sample	1,7
	9407	3900	21	28N	16E	N, SSC		Sample	1,7
	9408	3900	21	28N	16E	N, SSC		Sample	1,7
	9409	3900	21	28N	16E	N, SSC		Sample	1,7
	9410	3900	21	28N	16E	N, SSC		Sample	1,7
	9411	3900	21	28N	16E	N, SSC		Sample	1,7
	9412	3900	21	28N	16E	N, SSC		Sample	1,7
	9413	3900	21	28N	16E	N, SSC		Sample	1,7
	9414	3900	21	28N	16E	N, SSC		Sample	1,7
	9415	3900	21	28N	16E	N, SSC		Sample	1,7
	9416	3900	21	28N	16E	N, SSC		Sample	1,7
	9417	3900	21	28N	16E	N, SSC		Sample	1,7
	9418	3900	21	28N	16E	N, SSC		Sample	1,7
	9419	3900	21	28N	16E	N, SSC		Sample	1,7
	9420	3900	21	28N	16E	N, SSC		Sample	1,7

# Agencies and Organizations Cooperating in Montana Snow Surveys

## GOVERNMENT AGENCIES

### Canada:

Water Survey of Canada, Calgary, Department of the  
Environment  
Water Resources Service, Department of Lands, Forests  
and Water Resources, British Columbia

### Federal:

Department of the Army  
Corps of Engineers  
U.S. Department of Agriculture  
Forest Service  
Soil Conservation Service  
U.S. Department of Commerce  
NOAA, National Weather Service  
U.S. Department of the Interior  
Bonneville Power Administration  
Bureau of Indian Affairs  
Bureau of Reclamation  
Fish and Wildlife Service  
Geological Survey  
National Park Service

## STATE

Montana Association of Conservation Districts  
Montana Department of Fish and Game  
Montana Department of Natural Resources and  
Conservation  
Montana State University - Agricultural Experiment  
Station  
North Montana Branch Station - Agricultural Exper-  
iment Station  
University of Montana - School of Forestry

## PRIVATE

Montana Power Company

Other organizations and individuals furnish valuable  
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is gratefully acknowledged.

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